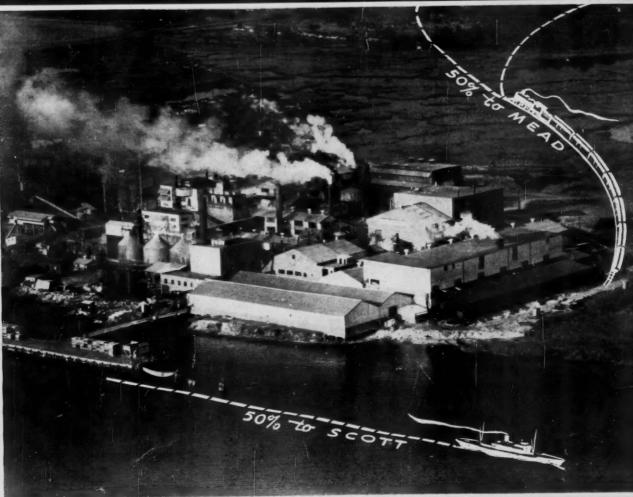
THE PRODUCTION AND MANAGEMENT JOURNAL OF THE NORTH AMERICAN PULP AND PAPER INDUSTRY





HIPLY FIFTY — FOR IMIAD AND FOR SCOTT mount discussed and south so

Your
daily bread
depends on
a Rice Barton
papermaking machine



among the many types of
paper successfully made on Rice Barton machines.
In earning your daily bread
you can safely depend upon Rice Barton



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papermaking machines.

Worcester, Massachusetts Paper Machine Builders Since 1837

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Rex H-Type Conveyor Chair



Rex Combination and



Rex Refuse and Log Haul Chai



Raldwin-Pay Roller Chain

Rex Chabelco Steel Chain is ideal for mill drive service. Since most mill drives operate under heavy loads at low to moderate speeds, Rex Chabelco delivers more horsepower for each dollar of investment. Here's why:

ment. Here's why:
First, for equivalent load, Rex Chabelco Chains and Sprockets are
lower in original cost than other types of driving medium. Often a
single strand Chabelco Chain will handle loads that require multiple
strands in other types of drives.

Second, Rex Chabelco is lowest in overall operating cost and assures the longest overall drive life. It is a precision-built chain made of high carbon or alloy steel, heat treated for high strength and durability. Clearances are built in between chain parts, permitting exposed operation under severe conditions. Dust and dirt are far less likely to build up between chain parts and cause "freeze-ups." Heavy shock loads are easily accommodated. Maintenance is simpler ... more economical.

Rex Chabelco Chains come in a wide variety of sizes and strengths. They are frequently used to replace cast chains of equivalent size where greater strength is necessary. They can often operate over the same sprockets as equivalent size cast chain.

same sprockets as equivalent size cast chain.

Rex Chabelco Chain Drives are easy to select. For information, ask your local Rex Field Sales Engineer, or write to Chain Belt Company, 4691 W. Greenfield Ave., Milwaukee 1, Wis.



CHAINS AND SPROCKETS

Season's Greetings

The poet has written: "Friendship is a sheltering tree"—an appropriate text, indeed, for the Holiday Season . . . Now at the close of one year and on the threshold of a new one, we renew our appreciative thanks for the heartening confidence of so many friends through so many years . . . and extend good wishes to all in the Pulp and Paper Industry for their well-being in 1952.

GOTTESMAN & COMPANY, Inc.



A MILLER FREEMAN PUBLICATION

Publication Office, Emmett St., Bristol, Conn. Executive, Editorial and Advertising Offices SEATTLE—71 Columbia St. (4); MA 1626

Other Editorial and Advertising Offices

NEW YORK—370 Lexington Ave. (17); MU 3-9294 CHICAGO—55 East Washington; ST 2-1100 NEW ORLEANS—3518 Dante St. (18); AM 2762 VANCOUVER, B. C.—675 W. Hestings St.; MA 1520 534 SW Third Ave., Pertland 4, Ore.; 121 Second 5 San Francisco 5; 815 Witmer St., (17) Los Angeles

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The New South—Is Old South Throwing a Road

An important development in the South today is rapid development in that area of chemical fibers and of high alpha Southern pine pulps for textiles, tire cord and cellophane, in direct competition on all fronts with the historic King crop of the South-

It has been over a decade since Rayonier at Fernandina pioneered in making a high alpha pulp from Southern pine. Now we have the hardwood Natchez mill of International, its production already being doubled and Procter & Gamble turning from cotton to wood for its raw material at its new mill to be built in Perry, Fla. The new Chemstrand plant in Alabama, Courtauld's Southern plans, and other chemical fiber developments in the South are all part of a boom that aims a blow at the more unstable, uncertain cotton linters supply for pulps and the uses of cotton itself in clothing.

It might well be argued that the synthetic fiber industries including rayon manufacturers and their suppliers in the woodpulo field are—in the long run—going to bring more stability, year-around work, more industrial permanence and wealth and better living to many Southern communities.

But the Cotton State senators and congressmen, the Wool State senators and congressmen, too, and the Federal Government, we find, are still ready at the drop of a hat, to go all out to support prices of these natural products against the competitive synthetic fibers.

As for wool, a textile manufacturer recently was quoted as saying some day sheep will be raised only for food . . . he sees rayon and synthetic fibers crowding out wool.

Will our politicians see what the future holds? Or will they continue to throw road blocks in the paths of progress-paths which can lead to more prosperity and good living than the South and some other favored regions have ever known?

Peering into the Future

"Stick around-better things are coming. If you can wait, within the next 50 years you'll see:

The atomic age passed, and industry using power from the sun. 'Salt water converted cheaply into fresh water, with resulting fertile lands where deserts now lie.

"A new era of synthetic fuels and other synthetics. Among them beer, wine and whisky.

"These are the predictions of Dr. James Bryant Conant, president of Harvard University and one of the scientists who made the world's first atomic bomb.

"And for good measure he added the opinion, that there will be no World War III in this century."-Nation's Business.

PULP & PAPER circulates all over the world. It is read in virtually every pulp and paper company office and mill throughout the United States, Canada, Mexico, Alaska, Hawaii, the Philippines, Australia and New Zealand. It is read in many other offices and mills in Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Uruguay, Nyenezuela, England, Ireland, Scotland, Sweden, Norway, Finland, France, Germany, Austria, Belgium, Holland, Czechoslovakia, Italy, Spain, Switzerland, Soviet Russia, Poland, Yugoslavia, India, Pakistan, Israel, South Africa, China, Japan, Formosa, both near and far around the world, where pulp and paper are made.

The Market for Paper

Has the paper industry a future? The general trend in production and consumption has always been up, despite temporary dips. Using figures familiar to our readers, as we have expounded upon them frequently in articles and in our World Review Number, D. J. Hardenbrook, vice president of Union Bag & Paper Corp., gives a dramatic picture of the tremendous market for development. He said:

Annual per capita consumption of all forms of paper in the United States is 370 pounds per year. Annual per capita consumption of all forms of paper outside the U.S. is 15 to 20 pounds. Annual per capita consumption of all forms of paper in Europe is 45 to 50 pounds.

'Assuming a total population of 700 million people in Europe, Africa and South America, of which 300,000,000 can be effectively reached, an increase of a single pound of annual per capita consumption in those areas will involve 150,000 tons of paper annually! In view of the startling increase in the use of paper in the United States since World War I, the possibility of increasing consumption abroad by 1 to 10 pounds is not far fetched."

Paper Use Spreads

Watch the paper industry grow!

A new plant has been built at Corvallis, Ore., called Potshop. It makes paperboard flower pots for florists to wrap and ship flowers in. Just on the Pacific Coast alone, 9,000 such pots are used every day in shipping.

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PULP & PAPER is published monthly, except June, when publication is semi-monthly, at Bristol, Conn., by Miller Freeman Publications, Inc. Subscription prices for 13 issues per year (12 monthly issues and al valuable and comprehensive reference issue entitled the World Review Number) are as follows: In the United States, Canada, Mexico and other Pan American Union nations—\$3 for one year or \$5 for 2 years. In other countries—\$4 for one year and \$7 for 2 years. Entered as second class matter Dec. 4, 1951, at postoffice, Bristol, Conn., under the Act of March 3, 1879. Postmaster: Please send Notice 3579 to PULP & PAPIR, 71 Columbia St., Seattle 4, Wash.



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paper exporters wood pulp



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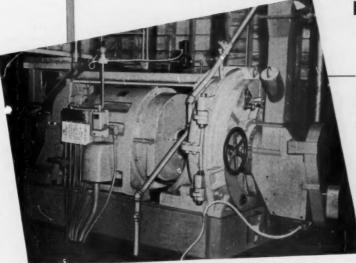
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to solve refining problems economically— CORNELL uses a

Sprout-Waldron
Refiner



First Sprout-Waldron unit in Cornell Wood Products Company semichemical pulp mill installation at Cornell, Wisconsin, making neutral sulphite semi-chemical pulp for cylinder board sheets.

Sprout-Waldron Refiners do an excellent job in any kind of pulping, but in semi-chemical operations they far outperform similar equipment. They do more, do it better, and at less cost.

Their unique peripheral control ring feature provides great flexibility of adjustment which enables mills to produce a wide variety of pulp characteristics. With the Sprout-Waldron you can pinpoint exact pulp requirements. Rugged, long-wearing plates are available in many styles. They are easily changed, and are inexpensive.

These precision engineered Refiners involve a comparatively low initial investment. Additional savings are achieved through high production rates, economy in power consumption, ease of operation and maintenance.

A Sprout-Waldron representative will be glad to explain how these Refiners can increase your output and save on operating costs. Write for Bulletin 41 which contains pertinent data on this equipment and how it can serve your needs. Sprout, Waldron & Co., Inc., 32 Waldron St., Muncy, Pa.

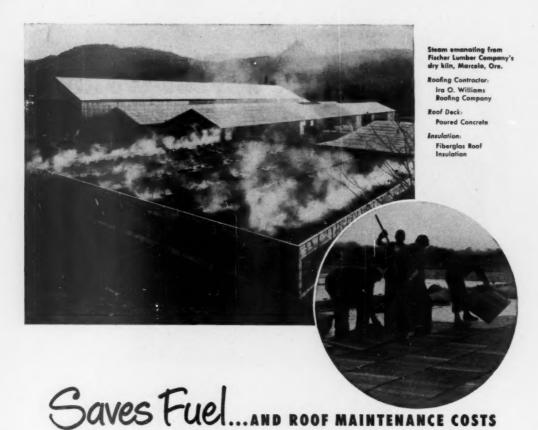
V Semi-chemical Pulping
(Bleoched-Unbleoched)
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V freeling - Groundwood
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V Kraft - Groundwood
V Secondary Refining
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V Secondary Refining
V Bleoched Soda Pulp
V Insulation Board Stock
V Hardboard Stock
V Flooring Felt
V Special Applications



Sprout - Waldron
Manufacturing Enginem

MUNCY + PINNSYLVANIA





Here's an application that proves FIBERGLAS* ROOF INSULATION's superiority. Interior temperatures in the pictured dry kiln ranging from 150° to 190° F. and yet . . . ICE STILL FORMS ON TOP OF THE ROOF!!

You'll find Fiberglas Roof Insulation excellent for severe conditions of this nature. We'll gladly certify to its insulating value as asted below:

Thickness of Board ½" ¾" 1" 1¼" 1½" 2"
Thermal Conductance .50 .33 .25 .20 .17 .13

These exceptionally low thermal conductances mean Substantial Savings in Fuel Consumption to You. Lower roof maintenance costs are assured, too.

Made of ageless Fibers of Glass which are unaffected by possible dampness, Fiberglas Roof Insulation will not rot or decay, swell or shrink. Other plus values: INCOMBUSTIBLE—LIGHTWEIGHT AND EASY TO HANDLE—PROVIDES HARD, SMOOTH MOPPING SURFACE.

Fiberglas Roof Insulation is handled only by leading roofing contractors. For name of local source and complete information, phone the Fiberglas branch office nearest you or write to Owens-Corning Fiberglas Corpobration, Box 112A, Santa Clara, Calif.

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SANTA CLARA, CALIFORNIA

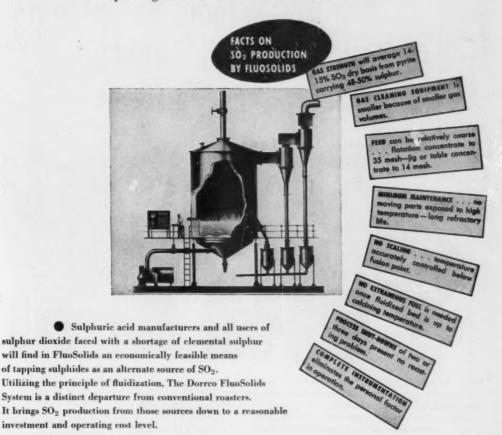


*Fibergies is the trademark (Reg. U. S. Pat. Off.) of the Owens-Corning Fibergias Corporation for a variety of products made of or with fibers of glass

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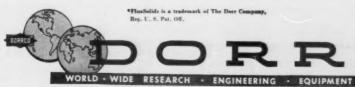
14-15% 502 GAS from PYRITE

Dorrco FluoSolids* will produce it . . . at lower investment and operating costs than conventional roasters.



Its economy, simplicity and ease of operation are indicated by the facts above. For more detailed information write to The Dorr Company, Stamford, Conn., or in Canada, The Dorr Company, 80 Richmond Street West, Toronto 1.

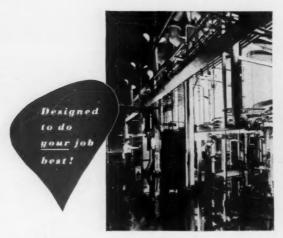




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General American for
CREATIVE
EVAPORATOR
ENGINEERING

Indoors or outdoors

-Use High Efficiency Conkey Integral* Evaporators





With minor design changes the Conkey Integral Evaporator is adaptable to any plant location requirement without sacrifice of its improved design and operational features. The Conkey may be set outdoors and provided with skirts making it completely self supporting. It may also be set indoors with the skirts omitted and structural steel supports added, which are provided either by the building framing or independent columns.

These advantages are found in all Conkey Integral Evaporators regardless of final job details:

(1) Easier to erect. (2) Needs less space. (3) Lower overall pressure drops. (4) Larger, more efficient entrainment separators. (5) Fewer mechanical joints to guard against air leakage.

Because its design reduces pressure drop losses between effects, the Conkey Integral Evaporator provides an increased working temperature drop across the heating element surface. Result: a net positive gain in evaporation—extra evaporating capacity. For complete technical information, write for Evaporator Bulletin.

Other General American Equipment:

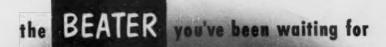
Turbo-Mixers, Filters, Dewaterers, Dryers, Towers, Tanks, Bins, Pressure Vessels

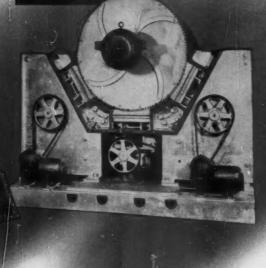
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Process Equipment Division GENERAL AMERICAN

Transportation Corporation Sales Office: 10 East 49th St., New York 17, N.Y. General Offices: 135 S. La Salle St., Chicago 90, Ill. 10 Canada: Canadian Leopostive Co., Ltd., Kingstop, Ott.





Smith beater is a new n machine for the hydration ing of all types of fiber. With it naximum required mullen, tensile and tear characteristics can be developed on a

It features a special roll in a totally enclosed housing, three bed plates, each independently adjustable to the roll; a special kind of hood; and automatic controls.

The stock enters under pressure at the top thru a vertical nozzle, makes the required passes between roll and plates and discharges thru a horizontal nozzle, also shown in the cut.

The stock does not spread clear across the face of the roll and plates in its travel as might be expected. Rather, spirally arranged vanes in the hood impart a definite spiral motion and the stock is forced to make at least eight independent trips under the roll and across each of three plates on

the discharge on the opposite side from the inlet.

The cycle is from 1 to 3 minutes during which time the stock is alternately compressed and released and receives a tremendous amount of hydrating and brushing.

The power factor is low because the roll does no circulating and there is no bar to bar contact. The replacement outlay for tackle is also low.

Both of these economies should particularly interest mills on kraft and semichemical pulps where larger numbers of jordans or disc refiners are normally required.

Capacity 50 to 100 tons, depending upon type of fiber being refined, freeness sought and tonnage required.

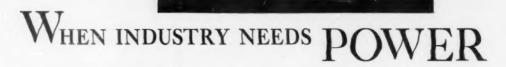
Fully assembled ready to install except for drive which may be flat belt, V-belt, or chain type.

Complete description on request.

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Steam Station at Moss Landing, California, designed and being constructed for Pacific Gas and Electric Company.





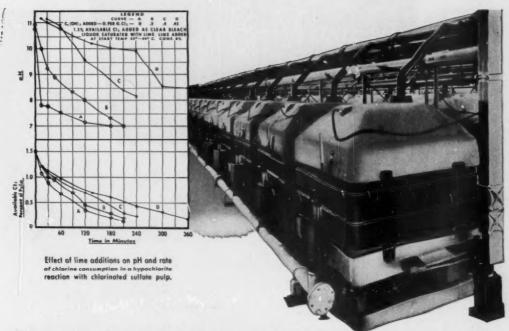
Central Boiler House and Water Treating Plant for National Tube Division, United States Steel Company

The experience of Stone & Webster Engineering Corporation is available to utilities or industries requiring facilities for steam or electric generation. The work of the Corporation in the steam power station field aggregates in excess of 8,800,000 kw in capacity, equivalent to about 16% of the utility steam generating capacity in the United States.



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Starting Point for Better Paper

The important bleaching step, at many mills, is handled with high-purity chlorine produced in Hooker "S" Cells at Niagara Falls and Tacoma.

So efficient are the "S" cells, that their widespread use by licensees and by Hooker is responsible for nearly onehalf of the chlorine produced in the United States.

When you use Hooker Chlorine you can be sure of uniformity that keeps your bleaching methods constant. What's more, you can depend upon properly conditioned and inspected tank cars to insure trouble-free unloading and handling. Technical Service by Hooker assures you of experienced advice on the efficient, safe handling of chlorine and other Hooker Chemicals.

For copies of interesting and informative papers on bleaching listed here, please write on your business letterhead.



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Bulletin No.

- 201 Process and Equipment for Making Bleach Liquor for Use Without Settling
- 211 Chemistry of Bleaching Chemical
- Wood Pulps 214 What Do We Know About Bleaching?
- 236 Importance of pH and Catalysta in Bleaching Operations
- 242 Production and Use of Unsettled
- Bleach Liquor 243 Procedures and Brightness Grades in Bleaching Sulfate Pulps



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New Method of Bark Burning

A revolutionary combination of—
Flash Drying—
Suspension Burning—

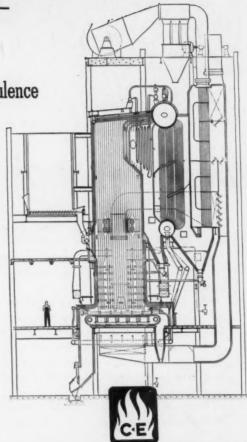
Extreme Turbulence

With the new C-E method of bark burning the bark spreader distributors are located in the front furnace wall at a considerable height above the grate surface. Combustion air is introduced through several rows of nozzles arranged so that air streams will impinge on each other tangentially. The direction of air rotation is reversed in each alternate row. The turbulent effect thus obtained fills the furnace with a swirling gas mass, that flash drys the bark and burns most of it in suspension. The rest is deposited in an even layer on the grate where it quickly burns to completion. The design, likewise, has proved highly successful for burning oil, alone, or in combination with the bark. It is equally adaptable to the use of gas as an alternate fuel.

In a paper presented before a recent Tappi meeting, the chief engineer of a large Southern paper company, discussed his installation of this equipment in detail. Of particular significance were these comments. "The savings in fuel cost in this installation represents a major portion of the financial return on invested capital. The reduction in direct operating labor resulting from the incorporation of the bark boiler into our main power plant building as well as the elimination of maintenance on refractory settings and water cooled grates has likewise effected an appreciable savings." In his report he also pointed out that performance has been excellent and availability exceptionally high—actually better than 99 per cent.

Here again a C-E development has provided the answer to a major fuel burning problem...a problem of widespread importance to the pulp and paper industry ie., a reliable and efficient means of burning bark and wood refuse. The services of the Combustion organization are freely available to your engineers and consultants.

B-537



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BATTLE AXE CHIPPER KNIVES take heavy feeds and cuts in high heat, without chipping or cracking . . . and there's a reason . . . HIGH ALLOY STEEL—especially heat treated for maximum toughness.

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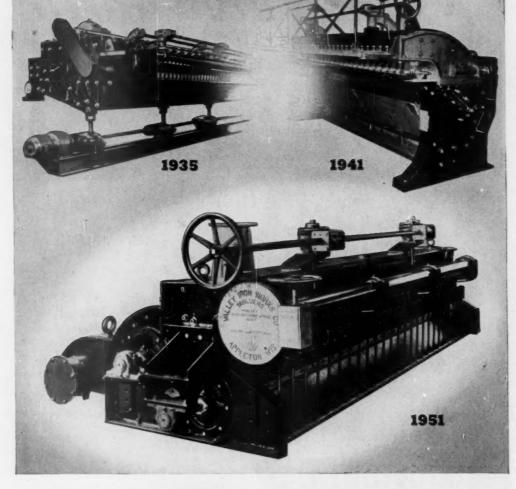
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WORLD'S LARGEST EXCLUSIVE MANUFACTURERS OF KNIVES

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PROGRESS in inlet engineering is never-ending at Valley. This progress, over many years, has built up a reservoir of experience which is yours to profit by.



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SULPHUR

*Interesting Facts Concerning This Basic Raw Material from the Gulf Coast Region

*LOADING



Sulphur intended for vessel shipment is brought to Galveston by rail from the mines at Newgulf. It is transferred directly from cars or from storage bins to the vessel.

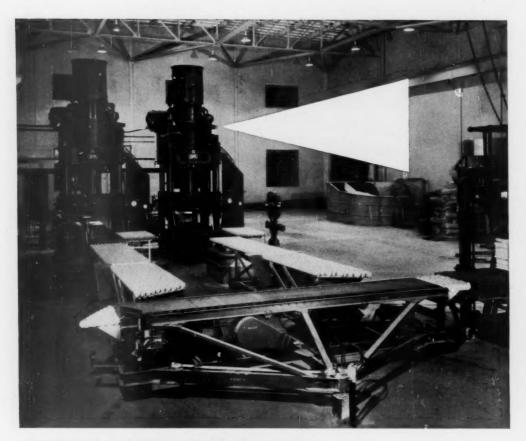
The loading plant consists of two parallel storage bins spaced far enough apart to allow room for railroad tracks, tracks for the hoppers and cranes, and an endless conveyor belt. The belt along the center line between the bins is straddled by four cranes and their movable hoppers.

The cranes pick up the sulphur from the bins or cars and discharge into the hoppers, which automatically feed the belt. It is weighed while on this moving belt. After weighing it is discharged onto a smaller belt which in turn discharges through a cylindrical telescopic spout directly into the vessel's hold.

Loading operations at our Newgulf, Texas mine



TEXAS GULFSULPHUR
75 East 45th St. New York 17, N. Y.
Mines: Newgulf and Moss Bluff, Texas



WEYERHAUSER TIMBER CO. another user of BALDWIN Hydraulic Presses

Two Baldwin 600-ton Hydraulic Presses keep baling operations in step with high-speed production at the kraft mill of the Weyerhauser Timber Company, Longview, Washington. Another Baldwin press, of similar design, is on the job at

this company's sulfite mill at Everett.

Baldwin Hydraulic Presses virtually a "Standard" in this industry—are serving in all the mills of the oldest, largest, and best-established paper producers on the continent. This wide acceptance has been earned by an array of desirable features . . . dependable; maintenance-free operation—and all-round satisfactory performance. One of our representatives will be glad to give you full details, on request.



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Philadelphia 42, Pa.

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BALDWIN-LIMA-HAMILTON

of SPEED REDUCTION

AN EXACT

With more than fifty years of practical experience behind us, the design and production of geared speed-reducing equipment has long been an exact science at Western Gear Works and Pacific Gear & Tool Works.

The ability to specify and design the correct reducer for any application—and the facilities to produce any required reducer—are major services we provide to American Industry.

WESTERN GEAR WORKS

Munufacturers of PACIFIC-WESTERN Goor Products

Pacific Gear & Tool Works

Ean Francisco
Lynwood
Houston
Representatives
Portland

costs more now!

You'll spend less for it with Dependable Quality

CRANE VALVES

...That's why
more Crane Valves
are used
than any other make

High Corrosion Resistance at Low Cost

Crane No. 14477 Alloy Cast Iron Gates give excellent service where "all-iron" or "brass trimmed" valves fail, due to corrosion of seating surfaces. Body rings, stem, and disc-faces are Crane 18-8 Mo. Conditions permitting, these valves, with low nickel alloy cast iron body, are ideal substitutes for hard-to-get, more expensive, all 18-8 stainless steel valves.

O.S. & Y. design keeps stem threads from contact with line fluid; straight through ports assure unrestricted flow, minimize turbulence and corrosive action. Extra-long guides keep disc travel true.

Your Crane Representative will gladly show you why Crane Valves give better performance at lower ultimate cost—why you should insist on Crane Quality.

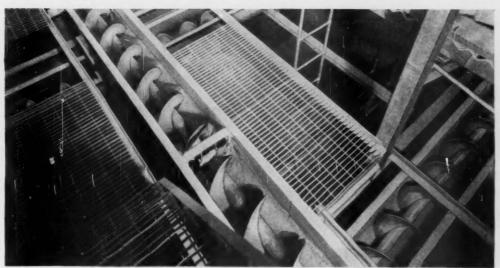
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VALVES . FITTINGS . PIPE . PLUMBING . HEATING

CRANE

Crane Alloy Cast Iron Gate Valve, 18-8 Mo. trimmed. 200 Pounds W.O.G.



This Link-Belt 12-inch screw conveyor delivers screened mixed material to four 12-inch diameter reversible screw conveyors. These distribute to 16 raw-material storage bins through a series of discharge gates and chutes.

There's no substitute for "total engineering" in screw conveyors

LINK-BELT integrates all components to give you the right screw conveyor for your job

HERE'S how "total engineering" works for you when you buy Link-Belt Screw Conveyors.

First, conveying specialists analyze your problem.
Then, Link-Belt's vast experience in design and

manufacture is at your command to recommend the

screw conveyor—or system of conveyors—for your particular requirements. The right components are then selected from Link-Belt's complete range of types and sizes.

Link-Belt "total engineering" on your screw conveyors is your assurance of efficient design . . . balanced performance.

balanced performance.

To benefit from Link-Belt's materials handling experience and engineering service, contact the Link-Belt office near you.

--- LINK-BELT designs and builds all components -----



SCREWS—Link-Belt makes a complete range of conveyor screws—Helicoid, Sectional Flight, Cut Flight, Ribbon Flight, Paddle type and other special types for such

diverse applications as feeding, conveying, mixing, agitating, stirring, blending, etc.



HANGERS—Available in a variety of styles and mountings, with various bearing materials and steel or cast hanger frames.



TROUGHS—Link - Belt builds flanged, angle flanged, flared, rectangular, dust - seal, jacketed and drop-bottom types in steel or alloy metals. Variety of connections, supports, covers and clamps offers added design flexibility.



SPOUTS & GATES—Plain discharge spouts cam be fixed or detachable. Discharge gates, flat or curved slide, can be hand or rack-and-pinion operated.



SHAFTS & COUPLINGS — Conveyor couplings and end shafts are designed for adequate torsional strength and have jig-drilled coupling bott holes for accurate alignments.



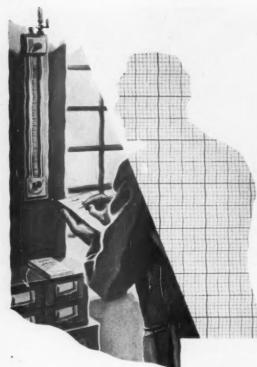
TROUGH ENDS—Steel or alloy metal plate or cast trough ends to match all trough shapes, provide required shaft bearing support and alignment. Seal glands to protect bearings, if required.



DRIVES — Link-Belt designs and builds many forms of drives to suit specific conditions — Enclosed gear, Electrobuid, P.I.V. variable speed, and chain drives of various types.



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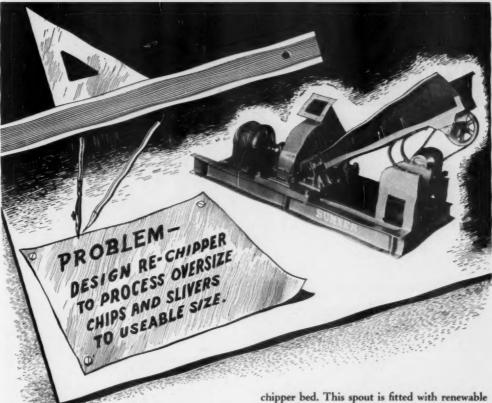
'SF' Electric Precipitator couples peak efficiency with peak economy in Soda Ash Collection at a paper plant.





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THE SUMNER RE-CHIPPER

RECOGNIZING the increasing demand for a Re-Chipper that would properly reduce oversize chips and slivers to a usable size for pulping purposes, SUMNER engineers, in 1948, gave the solution of this problem a high priority rating.

The designing of such a machine was complicated by the problem of feeding the light, unmanageable oversize chips into the blades lengthwise, for satisfactory cutting. This problem was met by the unique auxiliary chute attached to the SUMNER Re-Chipper pictured above. This vee-shaped trough is connected to a small motor with an oscillator which "shakes" the chips into alignment for proper feeding.

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The Re-Chipper is driven by a separate motor, connected to the arbor by a flexible coupling, and is mounted on a self-contained steel base.

For the past two years the first new SUMNER Re-Chipper has been satisfactorily performing its functions at the Crown-Zellerbach plant in Camas, Washington, according to mill-operators. The most recent shipment of a Re-Chipper was to Everett Pulp and Paper Co., a division of the Simpson Logging Company.

This record is factual proof of the capabilities of the SUMNER engineering department to assist in answering some of the many problems pertinent to Wood Room operations.

Detailed information on all SUMNER equipment will be gladly furnished on request.



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TEMAX FELTS lead you to cheer, because of their outstanding performance in your paper making machines. They give you efficient, economical operation to aid you in maintaining a profitable business.

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A Screen-Vat Assembly Well Worth Considering

Operators considering the erection of new board mills, the installation of additional cylinder machines, or the rebuilding of old ones, should seriously consider this special B-C Screen-Vat assembly.

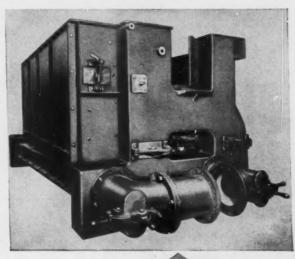
Shartle Selectifier Screens ahead of the vats (both liner and filler) for final cleaning and fiber bundle breaking. No mix boxes required.

Black-Clawson precision built vats incorporating vat circles, sides and partitions individually engineered for maximum efficiency and strength to withstand hydraulic forces at work.

Each vat individually engineered for your specific papermaking requirement. Over seventy-five years of experience in paper machine "know-how" incorporated in every vat that leaves the Black-Clawson plant.

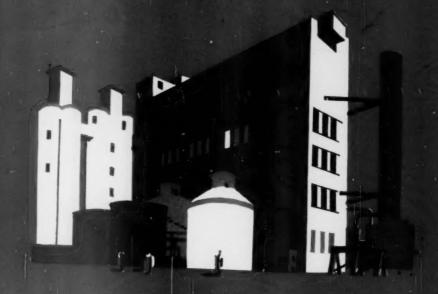
Mills that install Selectifier Screens in lieu of flat screens—B-C "Job Engineered" Vats with specially designed inlets—will benefit far more than they realize.

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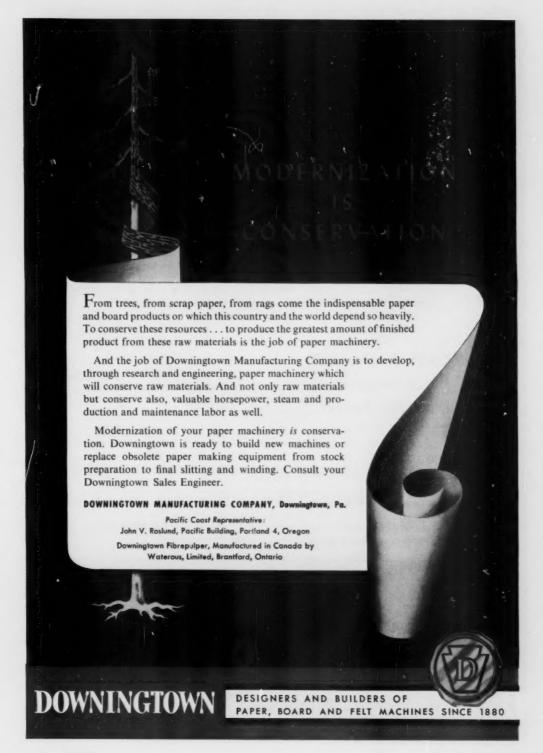
January 1952



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Puger Sound, pioneer pulp mill in the Pacific Northwest,
has been expanding consistently ever since World War II. New hydraulic
barking equipment, a new industrial alcohol plant also producing
Lignosite, a new paper beard mill . . . and, now, new facilities for
the production of bleached pulp. Puget Sound . . . the
oldest and newest pulp mill in the West.

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1951 Directories just in print

(Published June, 1951)

PULP & PAPER

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States of:

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CONTENTS:

- Alphabetical Directory of Mill Executives
- Production, capacity, equipment, facilities, products, officials . . . pulp and paper mills
- Wood Fibre Wallboard manufacturers
- Pulpwood dealers and contractors (Southern edition)

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Rex Combination-Type Mill Chain is designed to handle assignments that provetoo tough for ordinary H-Type Chain.

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For all the facts on this new chain, write to Chain Belt Co., 4691 W. Greenfield Ave., Milwaukee 1, Wisconsin.

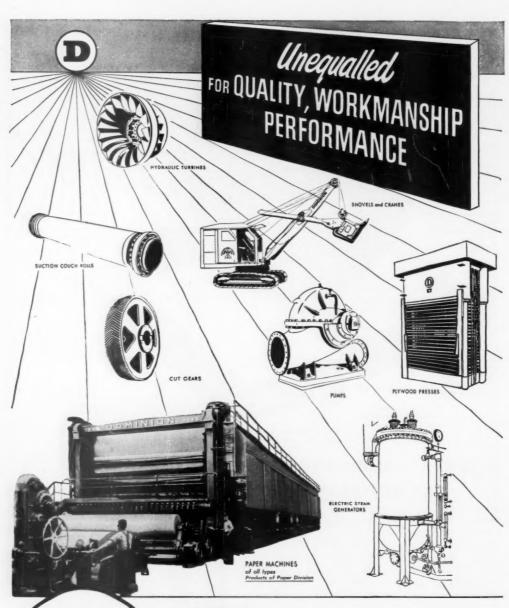
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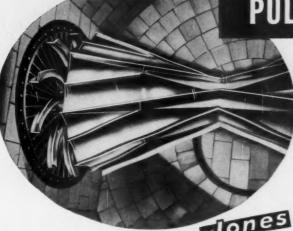


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Jones

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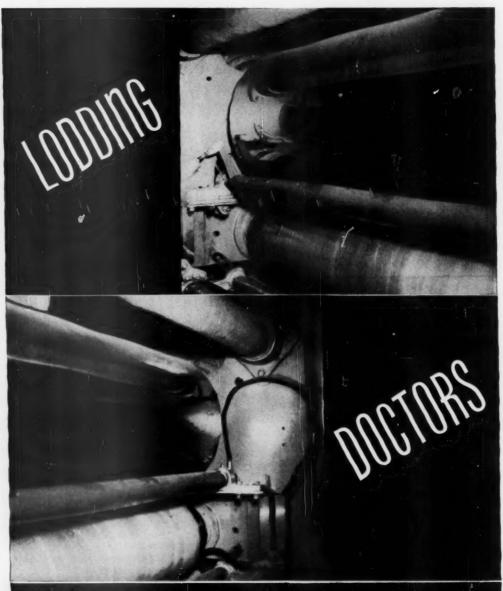
The reason? In installation after installation, this Refiner has chalked up impressive power savings — while giving better preparation of stock, more flexibility and better control.

Ask your Jones representative how it can improve your stock preparation, or write for Bulletin 1011B.

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HIGH-SPEED REFINER

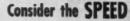
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The four great mill-type Camachines (Types 14, 18, 19 and 20) offer a choice of maximum speeds ranging from 1800 fpm on Type 14 to 5000 fpm on Type 20, depending upon characteristics of the material, number of cuts, web tension and machine width.

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Four great, job-proved mill winders offer you a choice of the model best suited for low-cost, dependable performance in your plant. That's one good reason why more than 400 paper and paperboard mills in the United States have chosen Camachines.

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Rolls produced on Camachines include over 80 different product classifications of paper and paperboard, from newsprint to roofing paper, in trim widths ranging from 53" to 310".

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Automatic counterweighting, sensitive tension controls, built-in alignment, and dynamic balance are among the many features which assure clean-cut uniformly wound, top-quality rolls in all mill type Camachines.

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Camachine Type 18 is one of the four great Camachine mill-type winders. The

Type 18 is dynamically balanced to the maximum speed of 2500 fpm. The Type 18 may

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PULP WOOD

IS A SLOW-GROWING CROP!



Even under the most favorable conditions of soil and climate it takes a tree about as long to grow to pulp wood size as it takes a child to grow to man size. New crops of trees must be set out by hand or grow from self-planted seeds as fast as old forests are cut over.

On the other hand, conversion of pulp into paper or board is a fast operation. Felts must remove water at terrific speed. And that, Mr. Superintendent, is precisely what Hamilton Felts do.

SHULER & BENNINGHOFEN HAMILTON, OHIO

MIAMI WOOLEN MILLS

Established 1858



Govt. "Window Dressing"

BUT-NO PRIORITY FOR NEWSPRINT

Anyone excited over the government announcement late in November of approval by DPA's Office of Program and Requirements of a program of expansion of newsprint capacity by 494,000 tons annually was definitely a victim of some fancy Washington "window dressing." Because there seems to be no intention by NPA (1) to grant certificates of necessity for construction of newsprint facilities ahead of other grades of woodpulp, or (2) to permit allocation of critical materials for such construction until the defense construction program is much further along than it is right now—which would certainly not be before the latter part of 1952.

There are strong indications at this writing that most of the applications for newsprint certificates of necessity—really just "hunting licenses"—will be approved, including that of Bowater. That still, however, does not change the situation as far as availability of construction mate-

rials is concerned.

As reported in Pulp & Paper's December issue, and re-affirmed by qualified Washington sources this month, there simply will not be the materials made available for new construction in pulp and paper during the first six months of 1952 regardless of certificates which may be issued or which are outstanding, or of what may be said about plans to build up newsprint production. Furthermore, one authority pointed out (and this may have been officially confirmed by now that certificates for news print production will not be given consideration ahead of other grades.

Interest along this line was aroused when DPA announced its approval of an expansion program for newsprint in November, saying a production increase of 494,000 tons was needed by 1953 to take care of the supply deficit. Companies with applications for tax benefits for construction of newsprint facilities were said to include: Bowater Paper Co., Inc., in eastern Tennessee, \$39,725,000; Southland Paper Mills, Inc., Lufkin, Texas, \$15,040,-000; West Tacoma Newsprint Co., Steilacoom, Wash., \$5,000,000; Great Northern Paper Co., Maine, \$2,000,000; Michigan Paper Co., Plainwell, Mich., \$1,500,000; and Crown Zellerbach Corp., West Linn, Ore., \$214,000.

Could Not Build Before '53

If applications for construction are approved, best guess is that work could not begin before early 1953 with the materials outlook as it is today.

Indication of what NPA would be telling the pulp and paper industry regarding materials was first revealed in the meeting of the Book Paper—Writing Paper Manufacturers Industry Advisory Committee in mid November. This group was told, as predicted by PULP & PAPER, that there would be sufficient maintenance, repair and operating materials available to keep paper mills operating at present capacities during 1952 in spite of the fact that it was necessary to restrict new construction and to cut down on controlled materials for manufacturers of paper ma-

NOTHING FOR THEM?





SIR ERIC BOWATER (left), President of Bowater's, London, whose plans for a newsprint mill in east Tennessee hit the shoals of critical materials shortages.

GEORG! F. RUSSELL (right), Vice Pres. of West Tacoma (Wash.) Newsprint Co., whose plans to increase his mill's output from 26,000 tons to 62,000 tens a year seem to have hit same shoals. He had stated that DPA announcement and "on explanation by J. NOEL MACY, of NPA cleared the way for further pleaning." But other Washington authorities say there's no chance for building till 1953.

chinery.

NPA also announced to the Book Paper—Writing Paper group, and later to other pulp and paper industry groups, that new construction authorized under certificates of necessity issued during 1951 would bring an increased production of woodpulp of 2,555,000 tons of which 1,448,000 tons would be bleached; 1,006,000 unbleached; and 101,000 tons of other grades. Much of this new production, however, may not be achieved until late 1952 or early 1953, even though construction is under way, because of the material shortages.

Sulfur-Alum-Chlorine

Other shortages, too, still endanger production in this industry. NPA spoke optimistically to industry representatives concerning supply of critically-short sulfur, alum and chlorine, but without too much to show why. In fact, from Washington came reports that a new order in January would further cut back sulfur available to industries. New chlorine facilities were expected to ease shortages by next June, but as far as sulfur and alum are concerned, the end of trouble seems nowhere in sight.

Although NPA and International Materials Conference figures on sulfur production and needs do not exactly jibe,

they are close enough to indicate that the situation is critical. In a recent summary, IMC estimated 1952 requirements at 7,596,000 tons, with production estimated at 6,255,600 tons. This leaves a 1952 shortage of 1,340,000 tons—a worsening of the 1951 shortage which was figured at 1,271,000 tons.

U.S. industry may suffer still more if political pressure brings about allocation of sulfur to free-world nations on a larger scale, as urged by Edwin T. Gibson, executive vice president of General Foods Corp. and former U.S. member of IMC,

in New York recently.

The situation as summarized for Pule & Paper at the time of this writing would indicate that this industry may suffer more from chemical shortages in 1952 than from shortages of metals. New construction will not be allowed, and there will scarcely be enough steel to permit completion of plants already started. But the industry has been promised that it will receive enough of the short metals for maintaining operations at present capacities. Sulfur is the key, not metals, as to whether this will be possible.

West Tacoma Plans

DPA's classification of newsprint as "essential" had encouraged George F. Russell, business manager of Tacoma, Wash, News Tribune, and vice president of West Tacoma Newsprint Co., to say the company plans to spend \$5,000,000 to increase output from 36,000 tons a year to 62,000. The 14 Washington-Oregon-California newspapers, many small ones, who share mill costs and production, would be increased by 30 more newspapers, he said.

Supporters For Bowater in South

Bowater Paper Co.'s proposal to erect a newsprint mill at Charleston, Tenn.. has brought support from Tennessee's Governor Gordon Browning, based on a report from the state forestry division, and from Gordon Clapp, TVA chairman, that Tennessee has 87,500 acres of yellow pine land and a total of 1,653,390 acres from which the mill could draw. Assistant U. S. Forester Charles L. Tebbe has showed concern about the forest drain, and there was talk of drawing some wood initially from Georgia and North Tennessee.

Interviewed by newspapers in Atlanta, Henry J. Malsberger, general manager, Southern Pulpwood Conservation Ass'n., expressed the opinion a mill in Southeast Tennessee would not impose an undue strain on pulpwood resources of adjoining

states.

Congressman Pat Sutton, Tennessee's 7th district, told a luncheon meeting some time ago the Bowater project was "assured." The only hitch, he said, was steel supply.

The Bowater project is to have capacity of 130,000 to 140,000 tons of newsprint

annually.

1952—"Year of Make-Do"

SUGGESTIONS FOR SUBSTITUTE MATERIALS

The year 1952 will be the "Year of Make-Do" for the pulp and paper industry—the year of substitutions for critical materials.

The pulp and paper industry faces the greatest cutback of mild and stainless steels and alloys, and of copper and aluminum, by the U.S. Defense Production Administration in the first quarter of 1952.

For the first two quarters of 1952, this industry will have the greatest difficulty in meeting its requirements in steels, copper and aluminum.

By the third quarter of 1952, the government should be ready to distribute more of these materials, except that improvement in stainless steels and alloys is not foreseen until the first quarter of 1953.

These were the ominous conclusions of a series of an NPA spokesman and other well-informed speakers at the annual Pacific Coast Engineering meeting, sponsored by the Coast TAPPI section, Nov. 14 at Longview, Wash.

is Stainless Used Wastefully?

Two questions seemed paramount in the minds of the audience. The questions and answers they got were:

 Are defense agencies using any real care or effort to conserve their own consumption of stainless steel? It was recalled that garbage cans were made of stainless steel in World War II!

James E. Maxwell, of Portland, Ore., representing NPA, referred to the provision forbidding use of the controlled materials for such uses as cafeteria table tops, decorations. etc., and suggested this might curb wasteful uses.

2. In the quarterly allotments of materials which are allowed for new "projects" or new "buildings," what is the definition of these terms? The reply was that, in the Pacific Northwest offices, at least, an entire new pulp and paper mill, with power plant, sawmill and wood plant, bleach plant, and any other interlocking units, must be considered as a single "project" as would a logging road, or even a single small building for any other industry.

DO-MRO is a Real Priority

Mr. Maxwell warned the mill men to demand respect for their DO-MRO priority—see to it that your suppliers meet delivery dates and treat is as a real priority, equal to any except a DX, or else it will become a second rate priority and you will have no one to blame but yourselves."

(DO-MRO stands for Defense Order—Maintenance, Repair and Operating Supplies—is the only priority for maintenance).

After describing the various "M" orders for paper, chemical pulps, sulfur and metals, he said "the outlook for pulp and paper machinery is not good." Allotments for the first quarter of 1952, he noted, permitted only 54% of 4th quarter supplies of stainless steel; 75% of carbon steel; 96% of alloys; 82% of foundry products; 82% of aluminum; wire products and other



DON FELTHOUS, Plant Engineer, Weyerhaeuser Pulp Div., Longview, Wash.—He was Moderator—His Panel Spoke of Dark Days Aband.

materials and supplies are also reduced. Don M. Platt, superintendent of electrical engineering, Crown Zellerbach Corp., Camas, Wash., followed the NPA spokesman, agreeing with him on most predictions of shortages, and proceeded to suggest substitute materials that could be used. He noted that motor deliveries were set back from 3 to 18 months (longer for big motors); gear reducers from 4 to 6 months.

Suggestions for Substitutes

He suggested substituting plastics and wood for metals; downgrading metals, as, for example, reducing bronze content in copper. He mentioned using reinforced concrete and wood (latter in place of steel) for structures; Timber Structure, Inc., structural products; corrugated plastic reinforced by Fiberglas for skylights; glass block or corrugated plastic for steel or aluminum sash; plain bearings or special liners to replace ball bearings; powdered metal made from mill scrap for bearings and bushings or other applications; Micarta, Nylon and plastics of other types to displace metal liners; asbestos cement pipe with castiron or rubber fittings: wood pipe where vibration is great and other substitutes cannot be used: rubber-lined steel in some liquor lines for stainless or for other corrosive situations; Dow Saran and Uscalite for small corrosive lines; plastic tubes for copper in instrument layouts and controls; aluminum wire and cable for copper. Mr. Platt said Saran, a Dow Chemical Co. product, is giving "a good account of itself" in the industry and is "easily fabricated." Saran Lined Pipe is used widely to combat corrosion and in one new kraft mill in the Southeast is very extensively used.

Mr. Platt said reconditioning of bearings will give 60% to 70% more line. At his mill, he said, they usually grind the two races and put in new balls.

Take Care in "Metallizing"

As for metallizing, he said this is a "a tricky job" when metallizing shafts for journal use, but "it can be done." Metallizing of pump shafts has been successful. There are several metallizing processes, one auditor pointed out, and care should be taken in making a selection.

Preceding these talks, L. E. Hill, Jr., plant engineer for Weyerhaeuser Pulp Division at Everett, Wash., discussed chip handling from barges and cars, and Harold Springer, Rayonier's chief electrician at Port Angeles, showed some pictures of electrical equipment corrosion and discussed that subject. Donald G. Felthous, plant engineer, Weyerhaeuser Pulp Division, at Longview, was moderator.

Walter DeLong, public relations director for Weyerhaeuser (no relation to the other Walter DeLong, his fellow-townsman in Tacoma, Wash., and St. Regis v.p.), gave a well-documented and impressive address at the dinner on growth of federal power and socialism in this country, and of the handicaps in matching "a soft life" in America against "a hard life" in Russia. He said 25,000,000 persons are getting federal, state or other government checks today—equal to one-third the labor force of the country.

"Government has gone into business and unless businessmen go into government, we are going to be legislated out of business," he said.

Eric Ericsson, technical director, Puget Sound Pulp & Timber Co., coast TAPPI chairman, presided. Arthur Erickson, chief chemist, and Erwin Olson, control project chemist, both of Weyerhaeuser, Longview, handled arrangements. There were 175 at the dinner.

FOR THE SOUTH! Appleton Wire Branch

For the first time in this industry's machine clothing history, a branch regional plant for manufacturing and warehousing is projected. Appleton Wire Works, Appleton, Wis., has started building a 15,000 ft. floor space plant in Montgomery, Ala., to better serve the growing Southern industry, announces W. E. Buchanan, president. First loom for Montgomery will have an unusually wide weaving width of 288 inches.

MUNISING SOLD

Control of Munising Paper Co., last of a long line of sulfite mills in North Michigan, has been sold to Kimberly-Clark. Munising buys its wood; makes specialty papers, B. L. Trillich continues as president.

SWAIM HEADS BOARD INDUSTRY

DYKE WARNS N.P.A.





MARVIN W. SWAIM (left), new President of the National Paperboard Association. He is First Vice Pres. and Gen. Mgr. of Alton Box Beard Co., Alton, Ill. As top association officer, he succeds GCORGE E. DYKE (right), Pres. of Robt. Gair Co., Inc., New York. Mr. Swaim, a native of Tennessee, went to Alton in 1927 from pioneering the boxing operations of International Shoe Co., and since 1944 has directed all Alton operations.

Marvin M. Swaim, who brought a new concept of paperboard selling to Alton Box Board Co. from pioneering the massproduction packaging of shoes, and who now heads all operations at the Alton, Ill., mill and subsidiaries, as first vice president and general manager, is the new president of the National Paperboard Association.

In taking over the helm, he paid a warm tribute to the 5-years' leadership of George E. Dyke, of New York, Robert Gair president. The latter, in a farewell address at the NPA convention in New York in November, predicted a 1951 production of 11,700,000 to 11,800,000 tons—about 800,000 over 1950—but he warned: "During this period inventories of paperboard in the hands of our converters mounted to very high levels."

"War psychology caused the great build-up," he said, "but we are now back on the trend of normal requirements. Over a period of time, excess inventory is bound to be liquidated." Orders had dropped in late 1951 from over 15 days to about 11 days.

"In order to meet requirements in times of high demand," he said, the board mills "must have unused facilities in time of less demand," but he cautioned that "those who have, or are bringing in, new production, should exercise leadership in its use . . . base your policies on a

thoughtful consideration of this responsibility."

He warned industry leaders to "consider the possible impact of erratic and irresponsible merchandising on those who may have to consider what price or other controls should be applied."

A Ceiling for Paperboard

However, as the convention was held, a ceiling price regulation to cover paper-board was reported well advanced in Washington, D.C., but a ceiling price on waste paper apparently was being held in abevance.

Ralph A. Powers, president of Robertson Paper Box Co., Montville, Conn., was elected vice president of the NPA; Albert W. Luhrs was re-appointed executive manager and F. G. Becker, executive advisor, and H. S. Adler was re-elected secretary-treasurer.

To the executive committee were elected Messrs. Swaim; Dyke; Richard C. Doane, International Paper; Sydney Frohman, Hinde & Dauch; M. C. McDonald, Chesapeake Corp. of Va.; W. Irving Osborne, Jr., Cornell Wood Products, and Henry D. Schmidt, Schmidt & Ault. U.S. government controls executives introduced. were:

N. M. Brisbois, chief of the OPS Paperboard and Paper Products Section; John J. Brossard, his consultant; Harry Levy, regional OPS representative in New York; O. K. Krogfoss, chief of NAP's Containerboard Section; and three NPA consultants—J. H. Macleod, Containers & Packaging Div.; J. W. Moore, Containerboard Section; and Chas. S. Moyer, Boxboard Section.

Membership of NPA was reported as 113 companies, increased by eight in one year, representing 83 per cent of the industry. Non-members were invited to join.



IN WASHINGTON, D. C.

WILLIAM H. CHISHOLM, who served as deputy director in the Pulp, Paper and Paperboard Division, NPA several months, is returning to his position as vice president of Oxford Paper Co., New York.

INDUSTRY MEETINGS IN '52

Canadian Pulp & Paper Assn.; Mt. Royal hotel, Montreal—Jan. 23-25.

Paper Week—APPA in Waldorf-Astoria; TAPPI in Commodore hotel, New York—Feb. 17-21.

Superintendents Assn. National Convention—Book-Cadillac hotel, Detroit, Mich.—June 17-19.

Coating Conference (TAPPI-sponsored)—Sherman hotel, Chicago—May 5-8.
Engineering Conference (TAPPI-sponsored)—Oct. 12-16.

TAKE KEY POSTS IN D.C.





LAWRENCE W. STRATTNER (left), is now Deputy Assistant Administrator of Chemical, Rubber and Forest Products Bureau of National Production Authority, Washington, D.C., as we reported last month. Mr. Strattner goes to Washington on leave from his position as Administrative Vice President of West Virginia Pulp & Paper Co., 230 Park Av., New York. He has particular authority in his position ever the pulp and paper industry, among others. He succeeded G. J. ("Gabe") Ticoular, Crown Z Vice Pres., who become DPA Deputy Administrator for International Problems under Manly Fleischmann.

WILLIAM M. McNAIR (right), of the Pulp Division, St. Regis Paper Co., 230 Park Ave., New York, has moved to the national capital en loan to take over the important assignment of Chief of the Wood Pulp Section of the Pulp, Paper & Paperboard Division of NPA. He is charged with the difficult task of administering NPA Pulp Consumption Limitation Order M-72. Never on easy task in this war or the last, it is particularly critical in times of short supply.

LLEWELLYN (LEW) NICOLSON, president of D. C. Paper Mills, Washington, D. C., has been promoted to deputy director of the Division. Mr. Nicolson joined the division in May and served as chief of the Wood Pulp Section.

J. PRENTIS SANGER, assistant sales manager, Crocker, Burbank & Co., Fitchburg, Mass., has been appointed special assistant for operations. Mr. Sanger is on loan from his company.

JOHN J. STEINBINDER, assistant machine manager of Riegal Paper Corp., Milford, N. J., is being loaned by his company to serve as chief of the Chemical Section of the Division. He replaces HAROLD H. HELLER, who was on loan from Kimberley-Clark Corp., Neenah, Wisconsin.

WILLIAM MC NAIR, Pulp Division of St. Regis Paper Co., New York, is the new chief of the Wood Pulp Section of Division. He takes over administration of NPA Pulp Consumption Limitation Order M-72, one of most critical assignments. He follows in the steps of the Larson-Graham-Evans-Ritchie-Porter-Nicolson line of administrators, who set high standards of fairness in a job of preventing any mills from being seriously hurt in the pulp shortages of this and the past war.

DAVID GRAHAM, remembered widely in the industry for his services in Washington, D. C. in Pulp Allocation, for the WPB in World War II, has resigned as financial vice president of Weyerhaeuser Timber Co., to join Standard Oil Co. of Indiana as financial vice president. It was mainly through his work in Washington that Mr. Graham attracted attention of Weyerhaeuser officials.



One of the most amazing stories we have ever published in this column is a contribution for this month from C. T. (Chet) Beals (shown in picture), who is technical assistant to the paper mill superintendents at Crown Zellerbach's big mill at Camas. And as you can see by his eloquent expression, as he struck this pose for us, he views with utter disdain any and all disbelievers.

Wrote Mr. Beals:

"The wisdom of the old adage that Truth is stranger than fiction' has never been so forcefully emphasized as in your 'Machine Tender Munchausen' story series appearing in your publication. You are to be congratulated for a real service to the pulp and paper industry in setting to record these amazing but true incidents that have had so vital a part in its history

and growth.

"Some of the strangest tales of the industry originated many years ago in the Mill That Was Run by the Tide. Though the weird happenings in this mill are undoubtedly known to many, I know of no place where they have been set to print. Lest they become completely forgotten by future generations, I hereby submit excerpts from this mill's history as a contribution.



Very truly yours, Chet. Beals"

We gladly send to Mr. Beals the customary honorarium for stories accepted for this column—\$5.00. Any of our readers are invited to submit stories to The Editor, PULP & PAPER, 71 Columbia St., Seattle 4, Wash.

Here is Mr. Beals' contribution:



design imparted by the worn flybars of that ancient beater roll.

Set for Victoria, B. C.

The colorful Empress Hotel in Victoria, B. C., "a little bit of old England in the new world," will be the site for a three-way meeting of Pacific Coast pulp and paper associations in mid-May 1952, if expected endorsement is obtained from the Western Canada Technical Branch of

plans awry. Due to the failure of his relief to come in, one of the machinetenders was forced to work overtime. It was not until his 32nd straight shift that fatigue overcame the intrepid fellow, and he fell asleep just before that crucial hour of the

He slept an hour. Time and tide awaited him not, and the waterwheel began to grind in the opposite direction. He slept an hour more, and yet another, then was suddenly awakened in a most rude man-

ner by a deluge of stock from an overflowing machine chest. A most surprising thing

had happened. The machine had been run-

ning up an almost full reel of paper when it

began turning in the opposite direction,

stripped the paper off the reel, and ran it

back into the chest as pulp at 3% con-

As the machinetender sat rubbing his

eyes in amazement, he was startled by a

shout from a wild-eyed beaterman, Now

here is the almost unbelievable part of

The roll of the beater had, of course,

also been reversed, and there pouring out

on the floor was a web of linen cloth just

the width of the roll, and fully equal in

quality to the finest of Irish linen. Enough

cloth had been run out from the rag stock

originally in the beater to supply tablecloths and napkins for all the families in

town for many years to come. As a matter

of fact, if one were to visit this little

village on the North Atlantic coast today,

he would have no trouble in finding a few linen cloths embossed with the curious

day-the change of tide.

sistency

this story

the CPPA.
Pacific Coast Superintendents and
Coast TAPPI would be the other partici-

Meeting Tentatively

pants and it is hoped to select three days close to the Queen Victoria Birthday

celebration on Sat. May 24.

Victoria, site of the first 3-way meeting in 1949, is one of only two or three places in the Pacific Northwest with adequate facilities to hold such a meeting. The two U.S. groups have okayed a plan to rotate 3-way meetings with two of every three in the U.S., the third in Canada.

MILL THAT WAS RUN BY THE TIDE

The mill in question was a small, one machine affair, located on the North Atlantic coast, and engaged in the manufacture of rag-base bond and ledger papers. It was in operation during the early part of the 20th Century, when, as you know, the pace of papermaking was leisurely indeed, and quite uncomplicated by the insistent demands of the plant superintendent for more speed and more tons: and the paper inspector with his endless supply of reject tags was still unknown. As a matter of fact, an inspector, had he been present, would have found life exceedingly dull. The stock was so well prepared, and the paper so carefully made, that only the topmost quality of sheet was wound up on the reel.

It was the custom in those days to utilize water power wherever possible for running paper mills. Usually a nearby running stream or waterfall was harnessed by means of a waterwheel connected directly to the mill machine. Our mill, however, was run, not by a waterfall, but by the tides of the sea.

It was located on the bank of a narrow entrance to a small bay, through which the tide rips ran at torrential velocities on both ebb and flow. The usual waterwheel was merely mounted in the channel, so setting the boundless forces of the moon to driving the wheels of beaters and paper machine alike within the mill.

One of the most serious problems that arose in designing the mill was to devise a means of keeping the machine running in one direction even though the water-



wheel revolved either way, depending upon the tide. After considerable study, the engineers came up with a brilliant solution in the form of a rather complicated set of reversing gears set in the shaft of the wheel. As a result, four times each day on the change of tide, a huge lever was thrown just as the waterwheel changed direction. So effective was this mechanism that the machine was able to run along without the slightest evidence of speed variation, and sheet breaks were virtually unknown.

Naturally—A Job for Machinetender

The responsibility of operating the lever was delegated to the machinetenders, since these men, then as now, were probably the most consciencious operators in the mill. Any initial apprehensions as to what would happen if the lever was not shifted gradually faded as the years went by and the machinetenders faithfully performed their task four times daily.

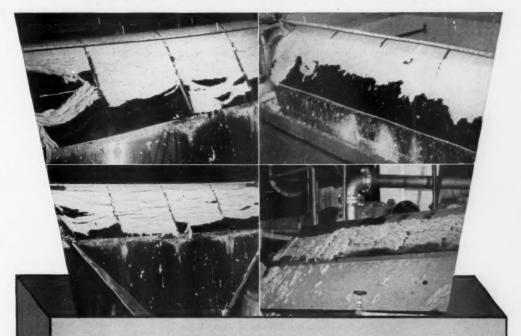
There finally came the time, however, when a vicious combination of circumstances contrived to set man's well-laid

Ammonia Process Used At Rhinelander Mill

One of Rhinelander Paper Co.'s eight digesters recently produced a satisfactory pulp after a two weeks' trial run. But since Rhinelander already treats much of its calcium base spent sulfite liquor by torula yeast process, weeks or months will be required to find out whether ammonium base liquor will respond equally well to torula treatment.

BIRD SAVE-ALLS

put good, expensive stock back into the machine chest where it belongs



Don't let any of *your* precious fibres get away. Make sure your Bird Save-All System is of adequate capacity and in good working order. Check with us if there's any doubt about it.

BIRD MACHINE COMPANY SOUTH WALPOLE, MASSACHUSETTS

ATENQUIQUE - 5 YEARS LATER







THIS NEW HIGH LOG conveyor goes direct to Chipper Plant at Atenquique, in distance. Bark-ing is done in woods now; Carthage 10-knife chipper and Heppenstall knives are used. Con-veyor can be switched to wood storage.

An up-to-date report on new installations and construction at Cia. Industrial de Atenquique, S.A., Mexico's kraft pulp and board mill at Atenquique, in the state of Jalisco, has been received from there by PULP & PAPER. In our May 1948 issue we carried a complete description of Mexico's first mass production mill at Atenguique. Jan. 18 is the 5th anniversary of its startup. It had been making 120 to 150 tons a day, depending on weight, and this seems to have been improved.

Present top personnel are: José Angel Ceniceros, (in Mexico City) general director; William Wesley Bryant, general superintendnt and paper technician; Felipe Ceniceros, administration and personnel supt.; Manuel R. Cortés, (in Mexico City), Purchasing Agent; Eng. Victor M. Vidal, pulp mill and laboratory supt.; Eng. Luis I. Rodriguez, recovery and power plant engineer; Eng. Roberto Muciño Ortega, chief electrician; Enrique Sanjurjo, maintenance supt., and Eng. Manuel Cid Bergman, forest techni-

cal director. Gustavo Alastriste is manager of Union Wood Supply Co., and Antonio Sánchez Aldana, is general superintendent.

Both the mill and the separate wood company are state-owned and the wood company is an outgrowth of the Revolutionary expropriation of timberlands.

New installations made recently in-

A steel and concrete railroad bridge across the Tuxpan River; replaces wooden one built in early part of 1945, when steel was not available for superstructure.

A new settling tank with capacity of 230,000 gallons, which has greatly improved water conditions. River water, mud and silt was a problem; nine sugar mills dump into the Tuxpan.

A 192 ft. by 59 ft. addition has been built onto the spare parts storeroom; enables a better arrangement and larger inventory of spare parts.

Three concrete silos have been erected for storage of salt cake, with a capacity of 650 short tons each. A Fuller Airveyor was installed to unload the salt cake.

A new steel and concrete warehouse, 175 ft. by 94 ft. has been completed for storage of chemicals and heavy equip-

HERE ARE THREE NEW CONCRETE SILOS for sait cake storage at kraft pulp and paper mill in Atenquique, Mexico. A Fuller Airveyor has been installed to pneumatically handle sait cake, supplied by Fuller Co., Catasauqua, Pa.



NEW CONCRETE SETTLING TANK with con for 230,000 gals., will help Atenquique, Mexico, combat its serious water problem. Tuxpan River is high in pH—it is dump for several sugar mills. Water is high in silica.

Installation of two new Goslin-Birmingham evaporators for the Recovery Department was finished in October. A 5-body Goslin-Birmingham was the original installation.

With a continuous circulating system, Atenquique has converted its digesters from direct to indirect cooking process.

A new concrete modern building for the laboratory was finished in mid-November.

A production increase of about 10 per cent was achieved by recovering rejects from the Bird Jonsson Knotter and the flat screens. This Knotter arrangement ahead of washers (Impco) was one of the first on the continent.

All wood is now being barked in the forest. After the sawmill splits it, the wood is delivered, by means of two new conveyors, directly to the Carthage 10knife chipper. This has, naturally, eliminated use of barking drum. Much wood is up to 20 to 30 in. diameter, for this is one of the few pulp mills in the world using virgin wood.

Facilities for recovering white water are nearing completion. Tile-lined storage tanks are already completed. Installation of filters and other equipment will be finished in the near future.

Plans are going forward to extend the power plant.

New installations and improvements to date represent an investment of approximately four million pesos (one peso equals 11% cents).

Last survivor among quite a list of Americans who helped start the industry is Gen. Supt. Bryant, who came from the

ATENQUIQUE'S NEW STEEL AND CONCRETE WAREHOUSE. This is 175 ft. by 94 ft. and provides the mill with new facilities for storage of various chemicals and for new heavy equip-ment that should be kept under cover.

Southern kraft industry. But Luis Rodriguez, power engineer since the startup, was educated at Georgia Tech and worked in the U.S. for Fairbanks-Morse, and Tony Aldana, woods superintendent, was educated at Santa Clara U. He and Victor Vidal, pulp superintendent, visited U.S. mills.

Thom Reports Increase In Lemon Grass .009



Mitchell W. Thom (shown in picture) former Victoria. B.C. superintendent and now manager of Los Cerritos mill, 40 miles from Guatemala City, Guatemala, wrote in December that he had increased produc-tion of .009 from about 90 tons a

month last spring to 270 tons a month. The mill makes pulp from lemon grass residue from an oil distillation plant. It has a Fourdrinier and six rotary digesters.

Mr. Thom said production is somewhat limited by quantity of available grass. But he has made 24 tons a day, though capacity is rated at 20.

A native of North Dakota, and widely known on the west coast, Mr. Thom reports his wife, Anna, and one daughter, Joan, are with him and their household includes cook, housemaid, gardener, horse, dog, cat, rabbit and parakeet. (Oh, for the life of a papermaker!) His address: Villa Linda, 5th Ave. and 2nd St., Tivoli. Guatemala City, Guate.C.A.).

First Newsprint Mill For South Africa

South Africa will soon have its first newsprint mill, using pine pulpwood from the Eastern Transvaal as raw material, if present plans materialize. An investment of more than \$15,000,000 is involved in the project, which will depend a good deal on the verdict of a group of Canadian experts who are due to visit South Africa early in 1952, to investigate the possibilities of producing high quality newsprint there. Experiments have been satisfactory.

Just Installed . . . in 3 More Leading Paper Mills in the South!

Sandy Hill-KAMYR Pulp Bleaching System

PULP bleaching methods developed by the Scandinavian firm of A/B Kamyr and recognized throughout the world for their superiority are available to the American paper makers in the Sandy Hill-KAMYR Pulp Bleaching System.

Kamyr attacked the problem of pulp bleaching at a time when direct chlorination first made its appearance on an industrial scale. Until then progress had been by steady but slow evolution, but this process started a period of revolutionary development. Kamyr made its start by introducing specially designed circulation pumps. Special Kamyr items already in use throughout the pulp industry were ultimately to form part of the KAMYR BLEACHING SYSTEM.

The soundness of Kamyr's theories developed and applied during these pioneering days has been proven by their adoption throughout the trade. Kamyr's emphasis on separate washing after each treatment, though long scorned, came to be accepted as standard procedure in all modern bleaching. The Kamyr vacuum washer meets any demand as to capacity and resistance to chemicals.

Kamyr's solution to the problem of efficient mixing absorption of chlorine offers one of its strongest claims of superiority. Installation of a circulation pump at the base of the chlorination tower converts the bottom into a mixing chamber. The inlet and outlet of the pumps are connected tangentially to produce a strong horizontal circulation. The chlorine and pulp are thoroughly mixed. The pulp rises to the top of the tower and flows to the following washer.

Pre-Impregnation Process

The Kamyr patented process for pre-impregnation at low density for high density pulp assures excellent impregnation thus producing a more uniform pulp, a higher alpha content and an increased yield. Sandy Hill's staff includes an engineer with more than 20 years world-wide experience in the Kamyr organization available for consulting services.

A brochure on the Sandy-Hill-KAMYR bleaching process, just off the press, will be sent upon request.



Kamyr Circulation Pumps—Type CT



Kamyr





Kamyr Vacuum Washer



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"Packer" Screens
Shaker Screens
Neilson Stice
Nilsa Bag Machines
Nilsatem Printing Presses

HAIL TO A NEW "CHAMP"

MILL MGR. JOE DOERFLER (right), is joyously tugging at a cord to blast the mill whistle at Kimberly, Wis, Division of Kimberly-Clark, He's not hailing the New Year—he's actalam ng a new national "Safety Champion" emong Class. A size pulp and paper mills. Safety Man Bill. YAN HOUT is at left. The mill whistle was blown the morning after the Kimberly Mill had broken the former national record for Class A mills held by Longview, Fibre Co., Longview, Wash. There was a moment of fur when a union man jokingly interrupted to tap Joe Doerfler on the shoulder, saying: "Yeu can't blow that whistle; you haven't a union card!"

As this issue went to press, the Kimberly, Wis., Division of Kimberly-Clark Corp., which makes sulfite pulp, groundwood and book paper, had its sights pinned upon the national safety record for all classifications and sizes of pulp and paper mill industries.

As we reported last month, Kimberly had broken the Class A record which had been held by Longview Fibre Co., Longview, Wash., of 2,612,656 man-hours without a lost time accident. By Feb. 15—if all goes safely at Kimberly—it can break the overall record now held by Hollingsworth & Whitney Co., Waterville, Me., makers of book and specialties, of 3,343,598 man-



hours. This record has stood since 1948.

Mills are classified according to size and products by the National Safety Council. Of course, Kimberly was virtually a cinch to win the NSC's Class A contest for the

year 1951, as well. And perhaps the trophy for 1951 for the lowest record of any type of mill.

Joe T. Doerfler, who is approaching his retirement according to company plan, said Nov. 15 was the happiest day of his 22 years as manager of the lower Fox River valley mill and his 46 years with Kimberly-Clark. The mill men like to "rib" Manager "Joe"—so when he was just about to pull the cord to sound the mill whistle in acclaim of a new champion, a union man stepped up and tapped him on the shoulder, saying, "You can't blow that whistle, Joe; you haven't got a union card."

FROM PULP TO "CATS" HUDSON'S RESEARCH PLANNER





HARRY M. FAIR (left), former Treasurer of Soundview Pulp Co., now merged with Scott Paper Co. as its Soundview Division, was reently elected Chairman of the Board of Caterpillar Tractor Co. Mr. Fair, who lives in San Francisco, was one of the organizers of Caterpillar.

RAYMOND S. HATCH (right), who is organizing a new Research and Technical Laboratory and Staff for the Southern Division of Hudson Pulp & Paper Corp., at Palatka, Florida, where praduction has been doubled with a second mechine for kraft specialities. Mr. Hatch was a founder of Pulp Bleaching Co. and for many years was Research Director of the Wayerhaeuser Pulp Division, until retirement. Recently has been living in California.

Appleton Newspaper Uses Calendered Stock

The Appleton (Wis.) Post-Crescent made experimental runs on Oct. 19 and Oct. 22 with calendered stock from Combined Locks Paper Co. at Combined Locks Wis., PULP & PAPER was advised by M. E. Cartier, production manager of the daily newspaper, which is one of the most progressive and successful papers for a town of its size in the country. It used a calendered sheet on first and second section covers on a portion of the Oct. 19 run and on Oct. 22 also used one 16 in. roll of the same calendered stock for a portion of the run.

Darmstadt of B & W On West Coast Trip

William J. Darmstadt, assistant to the manager, Process Equipment Division of Babcock & Wilcox Co., New York, visited the West Coast recently, particularly to discuss specifications for the B & W recovery-power units in a new Weyerhaeuser kraft pulp mill in Everett, Wash. He was accompanied by David Harris, Seattle manager for C. C. Moore, Engineers, Coast representatives of B & W.

REMOTE CONTROLS—THEY ADD UP TO MORE SAFETY A "DADDY OF PIN-BALL MACHINES" AT KIMBERLY MILL



THIS "DADDY OF ALL PIN-BALL MACHINES"—a giant electric clay control panel at the Kimberly, Wis., mill of Kimberly-Clark Corp.—had a small but vital role in helping that mill win the "Safety Championship" among larger-size pulp and paper mills of the U.S. This panel, whereby face powder soft-clay is moved through the mill at a 40-ton-per-hour clip, is also interesting as an example of a visual "flow sheet" board—minicalurisation, they call it—one of the newest developments in this industry. They are also sometimes called "graphic panels" and one going into a Southeast mill will miniaturize an entire refining pulp proparation process; one in the Northwest an entire bleach plant. This control board was engineered by Kimberly-Clark staff engineers. The '\(\frac{1}{2}\)-inch metal was fabricated in K-C shops and the flow diagram was painted by a Kimberly-Clark Field Service painter. An instrument engineer told PULP & PAPER: "In handling dry materials by push button this definitely is also a safety device."



DESIGN DETAIL Sales and Engineering Departments cooperate to insure that each machine will meet the specific needs of the mill. Al Olson (left) and Dick Smith (right) check with C. E. Bieber, Chief Draftsman, as to placement of doctors. Personal attention to design detail is an essential ingredient in the building of every high-speed, high-production Beloit paper machine.—Beloit Iron Works, Beloit, Wis.

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BRUNSWICK'S INCREASE

HOW IT ENGINEERED 400-TON OUTPUT

In June 1950 the operating management of Brunswick Pulp & Paper Co. presented to its principals a plan for increasing the daily capacity of its Brunswick, Ga., bleached sulfate pulp mill from approximately 290 tons per day to 400 tons per day. The mill was originally designed in 1937 for 150 daily tons, increased in 1940 to 200, and later stretched to 245. In 1948 a 45-ton expansion program was completed which brought the rated capacity of the mill to 290.

As the mill has been a pioneer in making bleached sulfate pulp from Southern pines and hardwood for high grade papers, quite naturally each stage of the modernization program brought about certain bottlenecks and inefficiencies.

The expansion program recently completed was designed as well as possible to produce pulp at 400 tons per day on an efficient and economical basis with first

emphasis on quality.

About the time the program was presented for approval, the Korean War started. This posed many serious problems, but after consideration the directors authorized procedure with the job in July 1950. Chas. T. Main, Inc. of Boston, was selected as consulting engineers and in early August, purchase of equipment and design work began. Since the outbreak of the Korean conflict, it was increasingly evident that materials would be difficult to secure. The consulting engineers had estimated that because of the necessity of tying in new with existing equipment without shutting the mill down, the program would entail a period of between 15 and 18 months before full production was reached.

How Engineering Was Coordinated

The Brunswick management, realizing the demand for increased pulp because of defense needs, early in the program set Aug. 1, 1951, twelve months from the time design started, as the completion date. It also realized that an unusual team composed of engineers, builders and operating management must be formed if the job was to be done in time. Special emphasis was placed on the fact that production must be maintained.

By Dec. 1950, sufficient design had been done by Chas. T. Main, Inc. and sufficient equipment received to start construction. However, for all practical purposes, no construction of any measure was started before Jan. 1, 1951. Exactly seven months and one day later production at the 400ton rate was achieved. The mill is now operating at this rate or better; on many days in the range of 425-450 tons.

Tidewater Construction Corp., Norfolk, Va., was contractor for piling, erection of steel, construction of buildings and setting of equipment. Rowland Tompkins &

BRUNSWICK-ITS BACKGROUND AND ITS MEN







Left to right: E. J. GAY-NOR III, President; J. W. McSWINEY, Asst. Sec'y-Trees., and GORDON K. SINGLETARY, Plant Man-

When the combined need for bleached pulp brought the Scott Paper Company and The Mead Corporation together in 1937 to create Brunswick Pulp & Paper Co., the thought was to build a flexible plant for future expansion—but hardly for the expansion that has

finally been achieved this year.

Equally-owned by Mead and Scott, and smoothly-operated by an Operating Committee composed of equal numbers of Mead-Scott-Brunswick men, the Brunswick, Ga., mill is notable for other things than the degree of its expansion. For one thing, Brunswick basically was a pioneer of the sulfate process for bleached pulp from Southern pine. For another, operating on about a 60-40 ratio of pine and hardwoods, the company is one of the few successfully producing bleached pulp from 100% gum-an often-despised wood of the Southern area.

In addition to its 50-50 ownership by Mead and Scott, the production of Brunswick is divided equally and shipped directly to plants of the two companies, as indicated in our cover photograph of the Brunswick mill. Mead shipments go out by rail, while Scott shipments go by boat through some 1,000 miles of protected coastal waterway to the plant

at Chester, Pa.

President of Brunswick is E. J. Gayner, III, who started with Scott in 1924, and worked up through that company to assistant factory manager. In 1938 he was transferred to Brunswick as vice president and general manager of the new company, and as president of Timber Lands, Inc. and during 1951, he succeeded C. R. Van de Carr, Jr., as president of the Brunswick Company.

From the Mead side came J. W. McSwiney in 1944 to take over the post of assistant secretary-treasurer. Fresh from the armed services, he had been with Mead since 1934, at one time operating a mill in Rockport, Ind. His first Brunswick job was to handle accounting, then purchasing, and finally his pre-ent post from which he has headed up the

construction program.

Gordon K. Singletary, plant manager, came to Brunswick from Calcasieu Paper Co., Inc., Elizabeth, La., in 1937 as tour boss, and worked through the posts of night and general superintendent to his present position. He has been one of the principal factors in development of the company. He is first vice president of the Superintendents' Association and is scheduled to become its president in June.

Son, Inc., New York, was piping contractor, and Rollison Engineering Co., Savannah, was electrical contractor.

These were served by many subcontractors, all coordinated in the field by the Brunswick operating management and field engineers of Chas. T. Main, Inc. A remarkable degree of cooperation and work performance was achieved.

During Jan. 1951, it was apparent that the job could not be completed by Aug. 1, unless a detailed schedule was worked out so each contractor would know at what dates specific work was to be done and what type trades would be employed. The significance of this can be drawn from the fact that, at the peak of construction, contractors had in excess of 500 trade em-

ployes in the Brunswick plant working throughout the entire operations. At no time did these trades seriously interfere with operations. In fact, average daily production was increased some 15 to 20 tons per day during construction. After completion of the detailed schedule, by trades, each general contractor was aware of the magnitude and scope of his job and the time allocated to each phase. Many laborious hours were spent in exploring ways and means whereby two jobs could proceed in the same area at the same time. The result of all these discussions was fruitful as will be noted by the completion of the schedule as outlined some 11 months previous.



 CHAIN BELT CO., Milwaukee, Wis., supplied links and angle iron cleats as chip drags for this chip conveyor built by Brunswick mill to carry chips to screens.



 BRISTOL DIGESTER CONTROL PANEL at Brunswick with Bristol automatic steam valve in left background. Has made economies, helped uniformity and improved operation.



3. TIDEWATER CONSTRUCTION CORP., of Norfolk, Va., constructed this east chlorination tower at Brunswick plant. They were contractors for construction, steel work, etc.

have been virtually impossible had it not been for the complete understanding and acceptance by mill departmental heads. Their cooperation with contractors was outstanding.

The scope of the work originally was estimated at some \$5,250,000 and is currently estimated to be slightly in excess of \$6,000,000. Increased equipment cost and labor cost plus larger electrical and mechanical changes than originally envisioned caused the increased cost. Description of the work follows:

Wood Preparation

One new 80 D Northwest crawler crane with 80 ft. boom was added to two existing Northwest cranes for handling wood from cars to yard or from yard to conveyor and into mill. No change was made in conveying equipment. The mill had previously operated its woodyard 96 hours per week in producing 290 tons of pulp daily. The 400-ton plant calls for operating the woodyard 112 hours per week, an increase in operating time of 11.6% as compared with about 40% increase in production.

4. FIBRE MAKING PROCESSES, Inc., provided digester circulating systems. In background, centrifugal pump and bottom of a heater. Kellegg digesters were carbon brick lined by Stebbins.

Production per-woodyard-hour operation has been increased by the installation of a new 10-knife Murray Mfg. Co. chipper to operate along side a 10-knife chipper previously installed in 1947. Only one chipper will be operated at a time, but as knife-change time will not be a factor with two chippers and as the throat of the new Murray chipper is designed to prevent plugging, the increased production has been attained without great difficulty.

Additional chip storage space was secured by simply raising the discharge conveyor over the existing chip bin about five feet, thus allowing the chips to be stored to a higher level in existing bins.

Electrically, wood preparation is fed through three 500 KVA Wagner single phase transformers 4160/480 volts. A modern filtered air ventilated control room houses all electrical controls, principally Westinghouse type "C" construction low voltage control centers. The two 10-knife chippers are driven by 400 HP, 4160 volt, 3 phase, 60 cycle, 450 rpm General Electric wound rotor motors, directly connected, through flexible couries.

5. M. W. KELLOGG digesters have bottom cone sections as shown here; 300-lb. Paul Valve on blow line at bottom left is hydraulically operated. Rives Co., Jacksonville, made stainless T connection. pling, to chippers. Permanent resistance is left in rotor circuit to give approximately 11% slip.

Digesters

Four new M. W. Kellogg Co. digesters were added to the existing six. The original digesters are of 3800 cu. ft. capacity as are the new digesters. All digesters have been lined with carbon linings by Stebbins Engineering and Mfg. Co. of Watertown, N.Y. The six old digesters, four of which had been in operation since the mill was built in 1937, were showing signs of corrosion to the point where it was necessary either to line them or shortly consider replacing them. It was decided to line the new digesters in order to prevent any corrosion problem and also to allow leeway for any type of cook that might be desired.

Each of the new four digesters have circulating systems of the Fibre Making Process type.

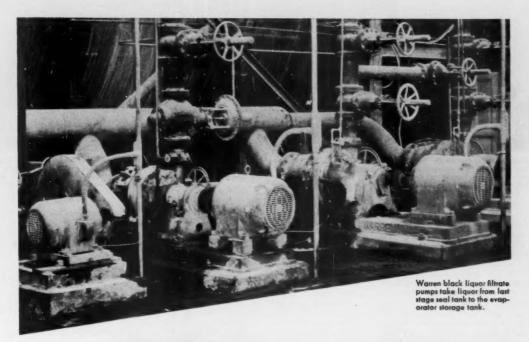
Automatic digester controls are installed on the four new digesters as had previously been installed on the old six. The controls were furnished by Bristol,

6. STEBBINS HI-DENSITY storage tanks at south end of Brunswick Wash Room. Between two tanks is re-wash seal box. The black liquor seal tanks are shown at right of this view.









32 Warren Pumps

share in latest expansion program at

BRUNSWICK PULP & PAPER CO. Brunswick, Ga.

From an original rated capacity of 150 tons daily in 1937 to 400 tons daily in 1951, adds another important chapter of progress and expansion to Pulp and Paper Mill history.

In this noteworthy achievement, Warren has been privileged to supply thirty-two Warren Pumps, bringing the total in this mill to approximately 126 Warren Pumps of various types and sizes and for the handling of liquor, pulped stock, water, etc.

Whether a new mill or the expansion and modernization of existing properties, time-tested experience indicates it is good business to specify:

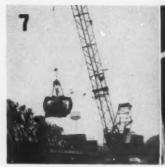
PP-01

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC., WARREN, MASSACHUSETTS

January 1952

45





per in operation since 1947.



8. D. J. MURRAY Mfg. Co. 10-knife chipper, 96-in. disc, driven by 400 hp. General Electric direct drive motor. Installed alongside a chip-9. IMPCO WASHER in Brunswick Bleach Room— one of two 8 x 16s. Stebbins tile vats have acid resistant asphalt cement. Powell valves at left foreground. J. B. POPWELL is operator.

7. NORTHWEST ENGINEERING Co. 80 D crawler crane was added to two already at hand at Brunswick to increase speed of handling in woodyard. Has 4-prong Owen arangepeel grap-

and as a result of their use, steam consumption has been reduced, pull-over of liquor minimized, cooking schedules have been accurate and uniformity of pulp produced has been increased. A new blow tank was installed after the new digesters. and the digester assembly repiped, so as to put five digesters into the existing blow tank and five into the new blow tank.

Each digester is equipped with a Paul Valve Corp. blow valve hydraulically operated by oil under pressure actuating a piston and cylinder assembled compactly with the valve. Remote pushbutton stations, both on charging floor and at digester discharge level, control the hydraulic circuit while indicator lights at both levels give visual indication of valve position. Each Paul valve is size 10 in., cast 316 stainless steel stellited at important wearing surfaces. Valve ends are flanged and face to face dimension is conveniently held to the glove valve standard for this size and pressure series.

Electrically, the digesters are fed operated through 1000 KVA unit substation and type "C" low voltage control centers located in filtered air control room.

For the entire program, 32 Warren pumps were supplied for handling liquor, pulped stock, water, etc., bringing number of Warren pumps in the mill to 126.

Brown Stock Washers

Largest single phase of the expansion program was construction of an entirely new washroom. The existing washroom was entirely outmoded and offered no

10. OLIVER BLACK LIQUOR washersof these 8 x 12's in Brunswick Wash Room; three in each line, with rewasher at end. Jamar-Olmen made exhaust hoods. DUTCH SMITH, at back, at Westinghouse controls.

hopes of modernization to produce 400 tons.

The operating floor of the new washroom is located at the same level as the digester operating floor. Two lines of 8 x 12 Oliver black liquor washers were installed, three washers to each line, with a rewasher installed at the end of each line. Rewashers were taken from the old wash room and are of Oliver type construction.

Included as a part of the new wash building are two hi-density storage chests, one after each line of washers, 18 ft, diameter and approximately 45 ft, high, These chests hold storage for approximately three to four hours operation at the 400-ton rate. Liquor seal tanks are of the horizontal type, 18 ft. diameter, the longest 100 ft. and the shortest approximately 70 ft.

The new washroom has fully automatic Foxboro control. It has flowrators measuring flow of stock to each line of washers, and flow indicators controlling dilution on all washers, along with automatic level controls on all seal tanks. The rewashers deliver the washed stock to two hi-density storage chests from whence it can be drawn at desired rates by the screen room. Desired consistency is obtained by use of two DeZurik Consistency Regulators. The mechanism for taking stock out of the bottom of the hi-density storage chests was by Improved Paper Machinery Co. and has worked very satisfactorily. Foxboro controls serve the consistency regulators.

washroom is fed Electrically the through two 100 KVA unit substations,

11. HAMMOND IRON WORKS seal tanks, horizontal type, at north end of washroom. This shows one of tanks. Impco foam breakers shown at top. Warren black liquor pumps can

type "C" construction low voltage control centers with filtered air control room. All washers are driven by General Electric variable speed D. C. drives. All stock moving units are electrically interlocked.

Screen Room

The original screen room contained six rows of flat screens of three sections each, and three rows of two sections each and two tailing screen rows of three sections each. Accepted stock is deckered over two 6 x 8 Oliver United Filters deckers and one 8 x 12 Improved Paper Machinery decker.

Five additional rows of flat screens of two sections each were installed, an additional section installed in each of the three existing two section lines, and one of the 6 x 8 Oliver deckers was replaced by a 61/2 x 14 Impco valveless decker.

Flat screens were equipped with Hardy Stainless Steel Screen Plates furnished by the Magnus Metal Division of National Lead Co.

From the hi-density chest stock is drawn by means of a remote controlled valve at a pre-determined rate. The screen room operator controls flow into a blending chest at about 31/2% consistency. From blending chest, stock is pumped into the suction of a fan pump. Outlet of the fan pump is divided into two discharge lines, each entering opposite ends of a headbox at the head of the screen room.

The discharge into each end of the (Continued on page 49)

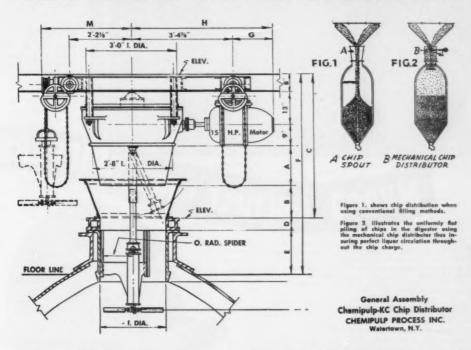
12. TWO OF 3 OLIVER 8 x 16 vacuum white stock washers in Brunswick Bleach Room, showing 4th and 5th stage wash. In foreground, hydraulic control valves raise and lower press roll. Stebbins tile vats.







The KEY to greater PULP YIELD and QUALITY THE CHEMIPULP K-C CHIP DISTRIBUTOR



FOR MANY YEARS the CHEMIPULP K-C CHIP DISTRIBUTOR has proven to be the most successful, flexible machine for obtaining maximum efficiency in chip distribution in digester filling. Numerous installations under a wide variety of working conditions have shown that the CHEMIPULP K-C CHIP DISTRIBUTOR will at normal rate of filling increase the chip content in the digester 25% and at the same time place the chips in such a uniformly flat position that practically perfect liquor circulation is assured throughout the charge. Even at a rapid rate of filling the chip content is increased between 10% and 15%.

NEW DEVELOPMENTS BY CHEMIPULP PROCESS

Circulating Systems Chip Pre-treatment Chip Distributor
Waste Liquor SO₂ Gas and Heat Recovery Recovery Tawers
Tail Gas Towers Hydroheater Acid System (Bubble Absorption)
Gas Fortifying Systems

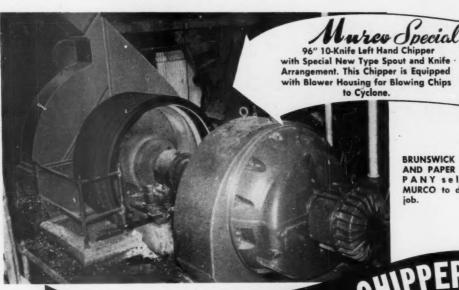
For further details on the Chip Distributor or any of the other Chemipulp Process developments, write for booklets.

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A. HALVAR LUNDBERG
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WATERTOWN, N. Y.

MONTREAL, QUEBEC
CHEMIPULP PROCESS LTD.
403 CRESCENT BLDG.



BRUNSWICK PULP AND PAPER COM-PANY selects MURCO to do the job.

MURCO MULTIPLE KNIFE CHIPPERS

ODAY, the most up-to-date, modern chipper design is the MURCO Multiple Knife Chipper with its extra heavy disc and construction that makes for smoother operation. They are engineered to fit the job, one of the deciding factors in their installation in Brunswick Pulp and Paper Company's new modernization program.

MURCO Multiple Knife Chippers are the result of careful study of the factors that contribute to outstanding performance . . so that today, MURCO Chippers have excellent records of achievement, exceptional endurance, freedom from repairs, while providing better chips with less sawdust and less space. MURCO Chippers are heavy duty machines . . . that places their constructions of the contribution of the c tion in a preferred class, and while ruggedly built, their simplicity of operation makes them most desirable for the daily demands for more and better chips at less cost in the up-to-date

Made in standard sizes 50 to 120 inches (Large sizes for special installations). These features are important to the mill operator . . . check our latest machines:

Uniform chips

Minimum sawdust

Fewer slivers

Production records of 100 cords and over per hour.

Heavy design and rigid construction reduces vibration.

Submit details on your production requirements. We'll provide a proposal and specification on a MURCO Chipper exactly suited to your needs.







MURCO Chippers can be furnished with card breakers, chip blowers, "V" or flat belt designs. Direct connected by flexible coupling to synchronous motor or engi



WAUSAU WISCONSIN



13. IMPCO VALVELESS DECKER, 61/2 x 14, handles increased production from screens at Brunswick, replacing one of old 6 x 81s. Cramped quarters indicate some of expansion difficulties.



14. FIVE IMPCO VIBRATORY SCREENS in screen room at Brunswick. Screens are furnished with Hardy stainless steel screen plates with .012 thousandths slots.



15. WARREN BLACK LIQUOR filtrate pumps take liquor from lost stage seal tank to evaperator storage. Have direct G. E. drives. Foxboro centrol valve on pump at left.

BRUNSWICK STORY

(Continued from page 46)

headbox is controlled by remote control valves under the control of the screen room operator, and as the volume of the stock delivered to the fan pump is fixed from time to time, a variance in the opening of the control valves into the headbox will either increase or decrease consistency being delivered into the headbox. Stock from headbox onto flat screens is controlled by valves. Tailings from two screens pass over an Impco vibration screen and the reclaimed fiber is pumped back to screen headbox. This equipment minimizes the effect of surges on the tailing screen and resultant stock losses.

Accepted stock from the screen room is stored in three brown stock storage chests at $3\frac{1}{2}\%$ consistency prior to delivery to bleach plant.

Electrically, the screen room is fed through a 1000 KVA bank unit substation, type "C" low voltage control centers in modern filtered air control room.

All tile lining in screen room, and bleach plant, too, as well as alterations to present installations, were by Stebbins.

Bleach Plant

Prior to completion of the program, Brunswick's bleach plant had been operating since its inception in 1937, with the exception of the first and second stage washers, on 6' x 8' washers. It was decided early in the program that all of these washers would have to be replaced and, with the exception of the first stage in the bleach plant, now all washers are

16. CONTROL ROOM has view of entire bleach plant. Westinghouse button panel. In left corner, Foxboro hi-density bleacher record-

ers. Controls for pumps, drives, stock right. Operator, CLAUDE HOGEBOOM. 8' x 16'. The plant now consists of:

First stage—two 8' x 12' rubbercovered Impco washers for he acid chlorination stage.

Second stage—8' x 16' Impco washer discharging its stock into Kamyr hidensity hypo towers.

Third stage—one 8' x 16' Oliver washer whence stock is dumped into two Kamyr hi-density caustic towers equipped with Kamyr CT-4 agitators and Kamyr automatic dilution nozzles built by Sandy Hill Iron & Brass Works.

Fourth stage—one 8' x 16' Oliver washer, whence stock is discharged to ten Fletcher bleachers.

Fifth stage—stock from Fletcher bleachers is put over an 8' x 16' final Oliver washer and discharged into an SO² soaking tower prior to delivery to machine room.

Improved Paper Machinery Co. mixers are employed after the second, third and fourth stage washers to give good temperature and chemical mixing control. One 8 x 12 rubber-covered Impco washer was retained along with the one 8 x 16 washer in the No. 2 stage.

The bleach plant is controlled from a room fully air-conditioned and at a level above all washers. The operator is able to start and stop all equipment, control all vat levels from the Foxboro-equipped room without leaving it. He will also be able to observe all washers without leaving the room. This step was taken to prevent deterioration of electrical equipment and meters and instruments by bringing in only conditioned air to the point of operation. It also means good

working conditions for operators during the maximum period possible. It was recognized that the whole area could not be conditioned, but a small area might be successfully handled. To date the plan gives promise of being an outstanding success.

Electrically, the bleach plant is fed through one 1500 KVA and two 1000 KVA unit substations, type "C" low voltage control centers in filtered air control room. All stock moving units are electrically interlocked.

Machine Room

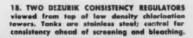
Brunswick had, prior to the expansion, one Rice-Barton 156 in. Fourdrinier machine with sixty 5 ft. dryers and one 156 in. Kamyr wet machine and Flakt dryer. The Fourdrinier was rated at 150 tons per day when the mill was built and during the 1940 program was raised to 200 tons. The Kamyr wet machine is rated at 175 tons per day by the manufacturer.

It was believed by the operating management that these two machines could be stepped up sufficiently to average 400 tons. At this writing it is evident that this can be done as peaks of 250 tons per day have been achieved on the Kamyr wet machine and rates up to 225-235 tons per day have been achieved on the Fourdrinier machine. Admittedly, however, this is a tight point in the mill's operation.

A new 1000 KVA unit substation type "C" construction low voltage control center was installed to modernize the distribution to No. 1 machine. There was a

(Continued on page 52)

17. IMPCO CHLORINATION AGITATOR drive unit sits stop low density chlorination tower, driven by G.E. vertical geared drive. Johns-Manville Transite pipe at right vents chlorine fumes.











Many former users of sulphur have found that Sulphur Dioxide can be effectively and economically substituted for sulphur. Many industries have made this conversion and the results have been most satisfactory. Sulphur Dioxide can perhaps, be just as effectively adapted to your operation. One of our representatives would be glad to consult with youno obligation to you, of course.



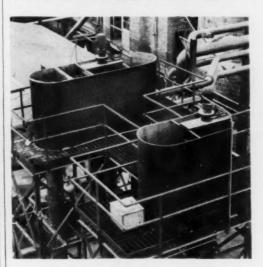
SIPHUR-DIO HIGHEST QUALITY SO

> For further details, wire, 'phone or write the Tennessee Corporation, Grant Building, Atlanta, Ga.

TENNESSEE TO CORPORATION 619 Grant Building, Atlanta, Ga.

MORE MILL CAPACITY

MORE DEZURIK REGULATORS!



The notable expansion project at Brunswick, Georgia, of the bleached sulphate operation of the Brunswick Pulp & Paper Company is one more instance where increased mill capacity has meant increased use of DeZURIK STOCK CONSISTENCY REGULATORS.

The illustration shows two stuff-box-type De-Zurik Regulators installed atop Brunswick's highdensity caustic towers, providing precise, troublefree control ahead of the screen-room.

DeZurik Regulators are available also in pressuresystem and gravity-flow types for every phase of stock handling. Automatic instrumentation functions with the most vigilant accuracy, provides a graphic 24-hour record of stock-system performance.

DeZurik engineers are at your service.

DEZURIK SHOWER CO. SARTELL, MINNESOTA

POWELL VALVES meet all requirements of modern industry

January 1952



BRUNSWICK STORY

(Continued from page 49) comparable control room existing for No. 2 machine installed in 1947.

Shipping Facilities

When the mill was built in 1937, it was necessary to take the pulp up an inclined ramp to get the pulp into box cars. This over the years proved a very costly item from a maintenance standpoint of trucks and equipment and also time-consuming in loading cars.

A new loading shed was installed adacent to No. 2 machine room and the road bed lowed to a vipil where pulp could be loaded

ered to a point where pulp could be loaded from the same level as the warehouse storage shed. This was a particular problem at Bruns-wick because tides often cover an area as low as the track bed. This problem was overcome by diking around the tracks on the end with the lowest elevation and putting a flood gate in which would let drainage water out but would keep flood tides out. This has increased efficiency of shipping immeasurably.

In order to produce this added pulp, addi-In order to produce this added pulp, additional electrical and steam generating capacity was required. A new 6250 KVA, 5000 KW, .8 power factor unit, 4160 volt, 3600 RPM, 400 psig initial pressure covering generator was installed with 150 and 35 lb. extraction with concenser capable of taking full generator capacity. This new turbine was on the line in April 1951, just nine months after the decision to proceed with the job.

A new 120,000 # Babcock & Wilcox oil-fired boiler designed for 450 psig. 725° t.t. operation

boiler designed for 450 psig, 725° t.t. operation with auxiliaries was installed. Steam is generated in an efficient oil-fired boiler. Previous operation required that bark and oil be burned together. The old oil-fired-bark burners are being remodeled with Hoft over fired air jets, redesigned grates and Thermix dust collectors in-stalled ahead of the I. D. Fan to put them in efficient operating condition for bark-burning only

Under the new setup, the total steam load can be carried with any one of the bark burners or the new oil-fired boiler off the line for repairs. The plant has never previously been in

repairs. The plant has never previously been in this flexible position.

In order to provide a uniform sized bark for conveying and burning, an experimental Blo-Hog unit has been installed to hog all bark and refuse prior to conveying to the modernized bark burners. Consideration is being given to installation of a screen ahead of the hog to reduce material to size actually requiring

Electrical Distribution

Electrical Distribution

The primary electrical distribution system was changed over from 2300 volts to 4160 volts. General Electric metal enclosed switchgear was installed, all units in line and fed from a 2000 ampere main bus. Each unit is equipped with air circuit breakers rated 1200 ampere and 250,000 KVA interrupting capacity. All outgoing feeders are equipped with kilovav, kilowatt, ampere and integrating watt—hour meters. Each generator panel has kilowatt; kilovolt; ampere and integrating watt—hour meters. Field volt and ampere meters along with necessary field application relays and control switches are provided. Each machine has its own exciter and voltage regulator

and control switches are provided. Each machine has its own exciter and voltage regulator and a spare exciter along with voltage regulator can be paralleled with and substituted for either of the three regular exciters.

The No. 1 turbogenerator—turbine rating 4000 KW, double extracting partial condensing—generator rating 5000 KVA, 8 P. F., 2300 volts—was rewound for 4160 volts. The No. 2 turbogenerator—turbine rating 2000 KW, single extracting back pressure—generator rating 2500 KVA, 8 P. F., 2300 volts—was also rewound for 4160 volts.

In addition, the General Electric turbogenerator previously mentioned was installed.

All circuits of main distribution system ter-

20. PRIMARY ELECTRICAL DISTRIBUTION AVAILABLE

KEY MEN AT BRUNSWICK include these super-

Back row, left-A. R. CARRICK, Assistant Supt. Back row, lett—A. R. CARRICK, Assistent Jupit. charge of White Stock; N. R. WADE, Assistent Supt. in charge of Brown Stock; and J. L. BROWN, Assistant Supt. in charge of Liquor Cycle. In front row from left are: M. B. PINEO, Technical Director; J. R. GIRARDEAU, Woodyard Supervisor; N. H. MALIMOS, Supt. of Power; and W. J. BROWN, Plent Supt.

minate in departmental substations, 1000 KVA, 4160/480 volts, two at 1500 KVA, and type C low voltage control centers furnished by Westinghouse Electric Corp. The control rooms are well ventilated with filtered air to minimize the maintenance of controls to assure continuity of operations.

tinuity of operations. Motors installed are mostly General Electric totally-enclosed fan cooled and are started directly across the line. Motors of 200 hp. and smaller operate on 440 volts, 3 phase, 60 cycles, with a few single phase motors operating on 110 volts, 60 cycles. Motors above 200 hp. operate on 4160 volts, 3 phase, 60 cycle power.

Liquor Cycle

Ecaporators—Since the 1948 program, Brunswick had evaporator capacity slightly in excess of requirements under normal black liquor washing facilities. However, as the washing facilities were inadequate, solids delivered to the evaporators, ranged as low as 12 or 13 % and the evaporators were operating at capacity so far as water evaporation was concerned. By installation of the new Oliver washers in the wash room, solids delivered to the evaporators were increased to the point where additional evaporator capacity was not deemed additional evaporator capacity was not deemed necessary.

Recoveries—Prior to the expansion, Bruns-wick had one 150-ton Babcock & Wilcox re-covery unit, one 75-ton B&W recovery unit, and one 220-ton Combustion Engineering re-

and one 220-ton Combuston Engineering re-covery unit, the latter installed in 1947.

During World War II, the No. 1 and 2 re-covery units had been operating far in excess of capacity and were never fully repaired since that date. To fully modernize the existing No. 1 unit, additions were screen tubes of the fur-I unit, additions were screen tubes of the furnace bed, an economizer, air heater, superheater tubes and a disc evaporator. A chemical ash tank was installed to recover the ash, putting the unit in a completely modernized state. This resulted in a designed capacity for burning black liquor solids of 1,290,000 lbs. per day as compared with an estimated requirement at 400 daily tons of 1,200,000 lbs. per day. Electrically, the recovery units and evaporars are fed from two 1000 KVA unit substations. type "C" low voltage control centers located in filtered air control room.

Water Supply

To provide water requirements, it was necessary to install a fifth deep well. This was put down by Layne-Atlantic Co. to approximately 1000 ft. and produces water at 3750 gpm.

(Continued on page 101)

21. ELECTRICAL CONTROL room section. Westinghouse voltage control center for brown stock washers in back. General Electric Speed Variator power units for washers in lower fore-

19. BABCOCK & WILCOX 120,000 lb. oil-fired boiler allows oil use alone. Previous operation required bark with oil. Operator OTIS ROBER-SON stands in front of portion of control panel.



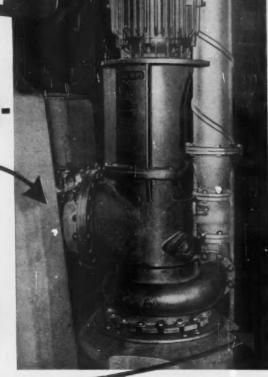




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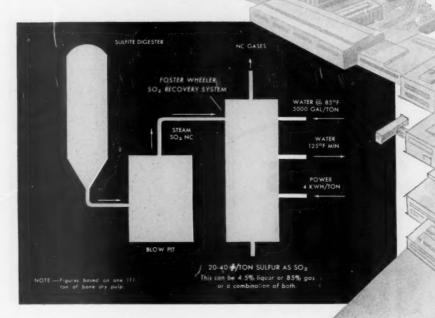
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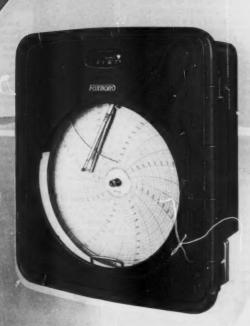




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CLOTHING TALKFEST

IDEAS ON WIRE AND FELT CARE

The cry for more and faster paper production has brought about some new concepts of the proper use of paper mill clothing.

Paper prices being what they are, at what point does a mill lose production and money by nursing along machine clothing? For instance, planning a wire change, instead of waiting for its failure, might save 2 or 3 hours.

The introduction of nylon into felts has revolutionized their life—with nylon, one big mill, for example, has speeded up machines from 33% to 40% while at the same time increasing felt life 100%! With nylon content felt, another mill has jumped its average felt life from 30 to 90 days.

As for wires, there has been no such timely new discovery to offset their generally inevitable reduced life as a result of machine speed-ups. However, there are ways in which mills might do a better job with wires at high speeds.

Rigid controls of mesh and caliper pay off, says one superintendent. Another declared "get ready for a quick change when a wire starts to stretch" that's the signal of the end of its life.

Abrasion often can be reduced by decreasing width of suction boxes with no loss of speed or increase in moisture content. Do not dress boxes oftener than absolutely necessary. And, of course, use of lumpbreakers and, ahead of machine, good stock cleaning systems, are widely known to pay off.

These are just a few of the "pearls of wisdom" that came out of a remarkably lively and frank discussion of clothing problems at the annual fall meeting of the Pacific Coast Superintendents Division

at Seattle Nov. 30.

Ed P. Barthelmy, tour foreman at Crown Zellerbach's biggest paper mills in his native town, Camas, and with 38 years' experience behind him, was moderator. He succeeded in drawing about 10 of the best known mill managers and superintendents on the Pacific Coast, as well as a few clothing salesmen, into probably one of the best public discussions of the subject in a long time.

Wires

The round table got off to an intriguing start when a kraft mill superintendent invited the papermaker audience to tell him why, after a 30% machine speed-up and simultaneous reduction of wire life by 60%—maintained for a short period—there has been an unexpected increase in his wire life. With the last two wires he had gained back a large part of his loss—about 40%—and he could not put his finger on any reason for it.

If he didn't get a satisfactory answer,

ROBERT E. WALTERS, (left) of Miller Freeman Publications, who represented PULP & PAPER in Midwest for several years, holds movie of 1951 Gold Cup motorboat races in Seattle with JACK SUTHERLAND, Hooker Electrochemical Co. Movies were shown at Man's Luncheon. At right: GORDON B. ANDERSON, Vice President, Puget Sound Sheet Metal Works, Seattle, who was Chairman of Registration and Housing.

AT CONVENTION IN SEATTLE:



JOHN VICTOR, Asst.
Paper Mill Supt., St.
Regis, Tacoma, Wash.
(and Acting Supt.
when John McDermott
has been at new
a-building Jacksonville mill), was a
leader in stimulating
and spearheading
cothina discussions.

PARTICIPANTS IN SEATTLE MEETING: TOP ROW, 1 to r: C. F. MEAGHER (pronounced "Mear"), Paper Supt. since 1930 at Fibreboard, Port Angeles, who gave paper. Born in Port Angeles, he first worked for the Lake Union boxboard plant in Seattle in 1910, joined Fibreboard at Sumner.

ED P. BARTHELMY, Moderator. Tour Foreman, Paper Mills, Crown Z, Camas, where he was born and worked for 18 years, but after he had worked at New Westminster and was a "screen monkey" as a youth at the defunct Swanson's Bay mill in British Columbia.

he at least brought forth a lot of counter-questions and with them a lot of opinions and suggestions on the general subject. His comment that he didn't run his wire any tighter than necessary, brought a newsprint superintendent's statement that he preferred tight wires at high speed—up to 1280 fpm in his case.

As for the kraft man it did develop that he had narrowed his eight suction boxes by 40% some time ago, with no decrease in speed or increase in moisture content. While there was no immediate conclusive effect, it was thought possible that the recent improved wire life might have been a "delayed reaction." He said his operation now plans to "shoot for" 150 or 160 lbs. pressure on the first wire shower.

Another kraft man said his mill has substantially gained wire life—from about 13 or 14 days to 21 to 28—by changing the suction couch drillings or spacings.

There was a discussion of whether wires wear out. A wire salesman con-

CHARLES L. WALTON, Plant Mgr., Fibreboard Div., Simpson Logging, Shelton. Born in Victoria, B.C., he worked for Woyerhaeuser at Longview. He was elected 3rd Vice Chairman of Coast Supt., and was Program Chairman of the convention.

WILLIAM W. CLARKE, Paper Mill Supt., Longview Fibre. Born in Yakima, Wash., graduate of Univ. of Wash., at Longview since 1933. He was Meeting Chairman, was elected 2nd Vice Chairman, also gave a paper.





Only the strongest warriors were capable of lifting and wielding these huge swords with great swinging strokes. In the hands of one of these powerful knights, the sword possessed great shearing and stunning power. Such blades required the best of steel and expert forging by the most highly skilled armorers.





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tended 80% are not worn out when they must be removed because of damage. This statement seemed to be, in a general way, accepted by most speakers. A specialty papers man, with experience in all main types of paper, said abrasion of stock dents causing holes and erosion on boxes and rolls, particularly in newsprint, was chief cause of wire removal.

A kraft superintendent said his mill measures 6½ to 7 thousandths of an inch of wire loss before it considers the wire worn out. Another kraft man reported a speedup of 300 fpm had not cut wire life. Getting back to the kraft man who started the discussion, he said his mill very seldom would dress their end grain boxes and had never dressed two Panelyte boxes in 15 months of use.

Felts

In the discussion of felts, there were several sensational testimonials in favor of nylon. Besides those already mentioned, a kraft mill reported an increase in felt life of 30%. Another said they had improved considerably, hoped to improve more. It was plain to see that the superintendents agreed that nylon was the answer to improved felt life and reduced costs in many cases.

Spreader rolls came in for a kicking around. A cylinder man said they were of "no good except to wear out felts," that there were better ways to achieve their objectives. Another speaker said they have been replaced by new type felt conditioners on Fourdriniers. Felt conditioners and shoes are used to keep felts clean; shoes do not wear as badly on felt as spreader rolls.

A specialty mill man said he can get from three days to a full week more life in a felt by: (1) careful inspection; (2) proper shrinking of the felt and (3) looking over and cleaning rools.

General speaking, keeping the felts clean and stock dents out of the wire will increase felt and wire life, speakers agreed.

One-Day Meeting

Because they had sponsored a National Convention on the Coast earlier in the year, the Pacific Coast Supts. Division crowded their usual two day fall meeting into one. Over 150 were at the dinner.

Papers were: Stock separation at Fourdrinier as aid to save all operation, by W. W. Clarke, paper supt., Longview Fibre; operation of suction drum press on cylinder machines, by Charles F. Meagher, Fibreboard's supt. at Port Angeles, and machine-coating problems, by Frank Hamilton, technical director, Everett Pulp & Paper. Mr. Hamilton's talk was on experiences in Michigan—now at Everett, his mill does not make, nor plan to make, machine-coated.

OPERATION OF SUCTION DRUM PRESS ON A CYLINDER BOARD MACHINE

By Charles F. Meagher
Paper Mill Supt., Fibreboard Products Inc., Port Angeles, Wash.

Our machine, prior to the various improvements that were made last summer in order to increase production and improve quality, was rated at 102 in. trim, consisting of five 36 in. diameter cylinders, fifty-eight 42 in. diameter dryers, a plain extractor roll, six sets of primary presses, the main first press and three sets of finishing presses with the third press operating in reverse. The machine was line shaft driven from the steam engine through the old opentype wood-filled drive-in stands having a top speed of 165 feet, a production of approximately 65 tons on various grades of combination boxboard.

Our improvements consist of: A steam turbine drive was installed in the line shaft; all new drive-in stands of the total enclosed type; 187 replacement dryers suitable for higher pressures; Midwest-Fulton evacuating system; a Ross hood; one additional vat; a 36 in, diameter mold; and a suction drum press, replacing the extractor roll and three primary presses. Top speed is now rated at 250 t.p.m. and average production at 75 tons per day. Prior to this changeover all water removal at the wet end was done by nip pressure alone.

In the manufacture of the various grades of boxboard that we produce on this machine, we

In the manufacture of the various grades of boxboard that we produce on this machine, we have had very little trouble from blowing or ply separation. It most generally was found to be off-freeness stock, some felt condition, faulty formation or pressing, and always any blowing encountered would be between either top or under liner or under liner and filler stocks.

under liner or under liner and filler stocks.

Since the installation of the suction drum press, our most serious problem has been in ply separation, predominantly in the middle of the sheet between webs of identical stock. The suction roll is 25 in. in diameter with a drill face of 116 in. width, drillings are ½2 of an inch. The suction box is 21 in. in width. The roll is crowned with .015 in order to carry a maximum mip pressure of 100 lbs. per lineal inch. The rider roll is a rubber roll of 18 in. diameter with a Densometer test of 90 with a one-eighth inch

ball. This roll was crowned .016 but we have since reduced the Crown to .008 for our operation. We have available approximately 24 inches of vacuum supplied by a Nash H-9 vacuum pump.

pump.
We have always had a compact well-formed sheet, but since speeding up we have found formation more critical, which could be expected. We have found that the differential between the water level inside and outside the mold, if allowed to get too great, retards formation, where at slower speeds, it seems to have no material affect.

In trying to control this ply separation we have had the suction box in the drum roll set at various positions and find the best setting is to revolve the suction box back until the felt starts to show wet on the out-turning side, then reverse the rotation of the box until the felt dries up. This places the couch nip just at the off-turning edge of the suction box. We find the setting of the box is very important; if rolled too far ahead the exposed part of the box will pull air into the sheet. At the primary presses any excessive air in the sheet will be forced to the center; there in its effort to escape it will weaken or destroy ply adhesion which will then show up as blows in the other presses. When this condition occurs we have had complete ply-separation on the dryers and at times have also had this occur when no visible blow was in evidence in any of the press nips. This, we believe, is caused by the weakening of the ply adhesion due to air in the primary presses to the degree that the sheet will not stand the internal stresses of the evaporation of the moisture from the sheet. We have now installed a vacuum breaker to control the amount of vacuum carried. We find that on slow stock we can use the maximum of vacuum. On free stock, less vacuum and more nip pressure. The speed of the machine and the freeness of the stock have a lot to do with the operation of the press. We have made progress on this problem but still feel that we do not have all the answers.

7 Years For Armbruster; Will It Be 8 For Morden





When the Pacific Coast Superintendents at their Seattle convention, elected Burke Morden (left), president of Morden Machines Co., Portland, Ore., as their new secretary-treasurer, it relieved Fred Armbruster (right), Northwest Dow Chemical Co, manager, of an association post he has held for 7 years.

Mr. Armbruster began keeping the records and finances of the division in Dec. 1944, after his first of seven elections. He succeeded Albert S. Quinn, president of Stebbins Engineering Corp., Seattle, who held it six years. There has been only one other secretary-treasurer, H. A. "Gob" Des Marais, General Dyestuff Corp., San Francisco, who held the job 5 years. As each one has out-distanced his predecessor by one year, Mr. Armbruster quipped: "So Burke will probably have it for eight years."

McCorry Is New Chairman; Walton Moves Into Line

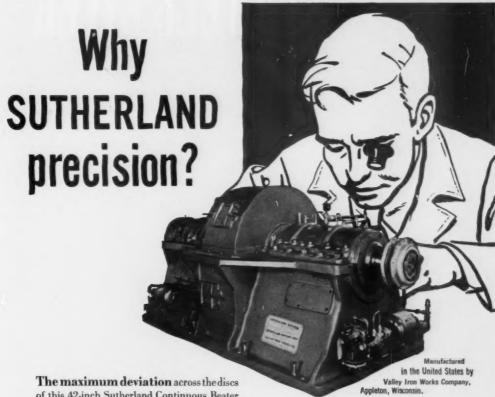




A. C. "Ace" McCorry (left) general pulp mill superintendent, St. Regis Paper Co., was elected new chairman of the Pacific Coast Supts. Division at the Seattle meeting Nov. 30. He succeeded L. R. Hartman (right) maintenance superintendent, Weyerhaeuser pulp mill, Everett.

The new third vice chairman, moving into the hierarchy's last position in line for the top honors, is Charles L. Walton, plant manager of the Woodfiber Division, Simpson Logging Co., Shelton, Wash. Mr. Walton, born in Victoria, B.C., has been in Shelton since 1927. He was four years with Weyerhaeuser in Longview.

Gus Ostenson, manager of paper mfg., C.Z., Camas, moved up to first vice chairman and William W. Clarke, paper mill supt., Longview Fibre, to second vice chairman.



The maximum deviation across the discs of this 42-inch Sutherland Continuous Beater is only two thousandths of an inch. And in addition to this precision machining, all parts are assembled to minimum tolerances. Why is this eleven-ton machine made so carefully... how does this accuracy pay off in your mill?

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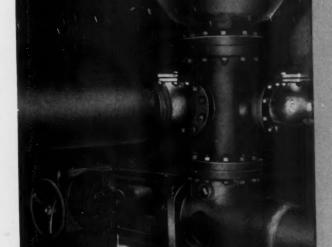
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You don't even have to go down to the discharge floor; the button can be conveniently located right on the operating level.

That's one of several reasons why Yarway Remote-Controlled, Motor-Operated, Digester Blow Valves have become standard equipment on pulp digesters in many leading plants—names on request.

One of eight Yarway Digester Blow Valves installed at a Canadian paper mill.

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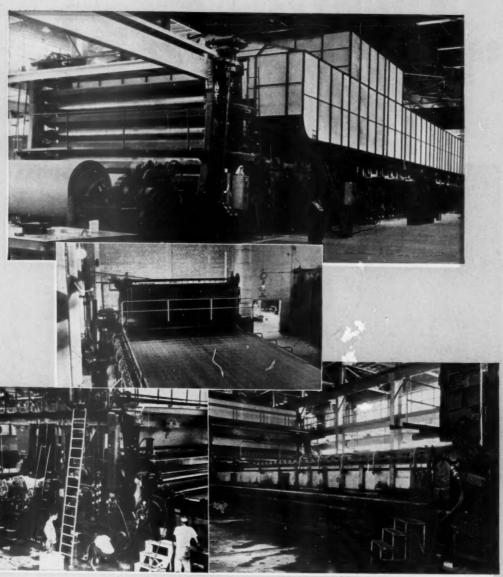
If you are interested in increased production, low maintenance, savings in labor—then you're interested in Yarway Digester Blow Valves. Write for full description and specifications in Yarway Bulletin B-440.

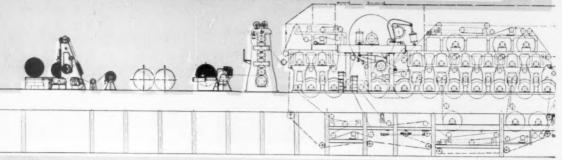
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It's the No. 2 machine for the Southern Division, Palatka, Florida mill of Hudson Pulp and Paper Corporation . . . a high-speed Puseyjones Fourdrinier that has taken its place next to the No. 1 machine built by Puseyjones in 1948.

It's a 2-purpose machine - for M.F. or M.G.

paper. It's the first machine of this type where the new vacuum pick-up and transfer arrangement is employed.

Special dryer arrangement includes a 12 ft. diameter Yankee Dryer followed by a small section of dryers to facilitate operation when by-passing the Yankee Dryer.

Whether you are interested in a complete new high-speed papermaking machine or in rebuilding your present machines for better profit, it will pay you to talk to a Puseyjones engineer now. Write or call us today.

FEATURES OF 236" "PUSEY-JONES" FOURDRINIER MF AND MG KRAFT MACHINE AT HUDSON PULP & PAPER

Designed for top speed of 2,000 feet per minute. Air pressure type headbox and slice.

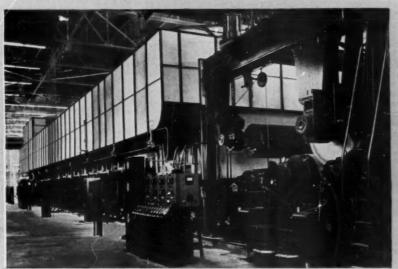
Fourdrinier Part suitable for win 236" wide, 125' long, equipped with breast roll 34" diameter table rolls 13½" diameter, and auxiliary diameter, and auxiliary drive couch roll 34" diameter Wire changing is accomplished with "Rapi-drape" device, including Hydra-motor unit for raising and lowering the breast roll.

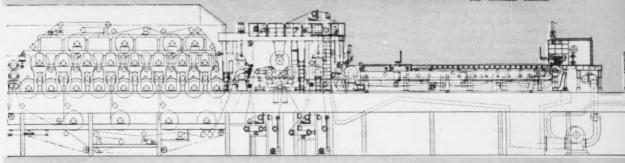
Press Part includes four suction rolls—26" pick-up roll, 36" transfer roll, and two 36" main press rolls, the latter in dual combination with a 60" center roll of socalled cloverleaf arrangement.

Dry Part consists of 45 supers and 14 eint dryen, all 60° diameter. A 43° receiving dryer is market. A 43° receiving dryer is maranged for creping. A smoothing press, which also may be used for striping, is located between the first and second dryer sections. The 12° Tankee dryer unit is also equipped with a special striping roll and follows the second dryer section. To simplify the handling of the sheet and minimizes breaks when playing the sheet and minimizes breaks when the special striping roll and follows the second dryer section. To simplify the handling of the sheet and minimizes breaks when the special striping roll and follows the second dryer section. To simplify the second dryer running of the sheet and the single stack of calenders. Other new features include air-controlled tension on the four-drinier wire, improved vacuum connections to the flat boxes, and quick handling device for removing and replacing individual suction boxes. Air loading has been incorporated in the calender state and the real redesigned to pa-vent vibration and fumping, the calender state the calender at the calender

8-roll Calender stack, Pope reel, and a high speed Winder with special roll handling device are provided at the finishing end. The machine is driven by G.E. electric sectional drive with individual section generators and full electronic controls.

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A SUPERINTENDENT TELLS OF EXPERIENCES

MACHINE COATING PROBLEMS

By Frank A. Hamilton

(His Experiences as Supt. of a Midwest On-Machine Coating Operation)

As superintendent of this operation, I had complete responsibility of coating preparation, the development of special coating formulations (such as offset coating), the preparation of the machine furnish, the operation of the machine, the supercalendering, and the finishing department. The machine coated grades manufactured by this operation were letter press and offset, coated one side and coated two side papers, varying in weight from 50 to 100 lbs. per ream.

BODY STOCK PROBLEMS

By body stock or rawstock we mean the sheet upon which the coating is to be applied. The most important single characteristic the body stock must have is a very uniform, smooth surface. Since the machine coating operation is almost identical to a printing operation, and the coating solution of 60 to 70% solids has a consistency like mayonnaise, it is not possible for the coating to flow down into any pits or valleys in the surface.

This matter of rawstock surface was one of the toughest problems we had to solve. In order to achieve a satisfactory body stock surface the formation must be very uniform. The furnish should be composed of fibers of varying dimensions only slightly hydrated and cut so as to obtain a well filled in sheet. The sheet does not have to be completely closed up, but should have a Gurley Densomenter reading of from 20 to 50 seconds for a 50# basis weight sheet. The treatment of the fiber, of course, is dependent upon the types of pulp being used. Fundamentally, the stock must be hydrated sufficiently to give good internal bonding, and on the other hand be free enough to obtain high machine speeds and a minimum of curling of the finished paper due to hygroscopic atmosphere changes.

If the fibers are not sufficiently cut as in a jordan the result is a sheet containing thick and thin spots with a blotchy formation. This will show up in the coated and calendered paper as a variation in gloss and smoothness, the thick spots having the higher tests.

Another important property the stock must have is resiliency so that the supercalender can sufficiently knead the sheet between the rolls and obtain a high gloss and smoothness. This resiliency is also an important factor in the satisfactory printing performance. A resilient stock will naturally conform better to the surface of the printing plates, the high spots on the surface of the paper being compressed during printing down to the same level as lower spots.

Groundwood pulp provides resiliency along with opacity to the body stock, but there is a tendency for these coarse fibers

Future of Machine Coating-Seen by the Author



On this page we publish major portions of paper given by Frank R. Hamilton (shown in picture) at the Pacific Coast Superintendents fall meeting in Seattle.

For a three-year period (1948-1951) he was paper mill superintendent of Kalamazoo mill which was licensed to install the Kimberly-Clark on-machine coating "printing press" fashion processes. He had previously had two years as superintendent of a brushcoating operation and eight years in technical work in the same mill. As a side remark, he mentioned that he lost 20 lbs. one hot summer during the startup of the new process

Now technical director at Everett Pulp & Paper, Mr. Hamilton wishes to warn readers his present employers do not make on-themachine coated paper, nor does it presently plan to.

He concluded his paper with these observations on the future of on-machine coating: "Technical men and superintendents are continually at work in attempting to obtain better coating lays, at heavier coat weights and faster machine speeds. Machine-coated sheets are equalling the qualities of off-the-machine grades in the publication field.

'One of the latest developments is the production of a water resistant machine-coated paper that is satisfactory for the offset printing trade.

"The next development, which may have been achieved by this time, will be the application of heavier coating weight, in the range of 14 to 16 lbs. per side. It will probably be necessary to install an additional coater on the machine to realize this heavy coat weight, but when the paper machine applies coating weights in this range the entire coated paper field can be taken over by the machine coaters. The only business left for the off-the-machine coaters will consist of specialty orders, such ps small runs of colored coatings, and papers coated with unusual materials for special end uses."

to show through the coating as slightly raised areas which result in a lower smoothness and less pleasing appearance of the coated surface.

Probably the most serious problem faced is one that all papermakers are continually battling-rough deckle edges. It seems to be the nature of the paper machine that edges should be rough, because every mill we have visited has the same problem. Most mills with which we are familiar throw up their hands at the possibility of completely smoothing up the edges. These rough edges provided some of us, as superintendents, with an excuse for a smoothness complaint by the customer. We would comment that the sheets returned by the customer must have been from the outside edge of the machine and there was nothing we could do about it.

Rough Deckle Edges

The advent of on-machine coating made it absolutely necessary to do something about the rough edges. In exect a machine coated sheet rough edges. In calcet a machine coated sheet has to accomplish the same final printing results as the off-the-machine grades. Coating at a low solids content off the machine, the coating solution will flow down into the low spots on the rough edges to a certain extent, but on the machine coater at high solids content and heavy coats weights the coating does not flow sufficiently to fill up the voids in the surface.

A number of steps were taken to smooth up the edges consisting of the following:

1. Adjusting the "no deckle" plates at the breast roll so that there was a minimum of rebounding of stock away from them, resulting in light edges.

light edges.

2. Raise up the slice at each end so as to run

the edges slightly heavy.

3. Make certain that plain or suction press rolls have the proper crown and pressures so that the water removal is uniform across the

machine.

4. As a last resort back away suction presses slightly so that the edges will run slightly wetter than the middle of the roll.

5. Adjust Ross-Grewin hot air system so that the moist air around the dryers is well circulated, preventing concentrations of damp air in the middle of the dryers with dry air at the edges. The drawing of dry air from the machine room into the sides of the dryer section will result in the march on the edges being over dried. Eninto the sides of the dryer section will result in the paper on the edges being over dried. En-el sing the drying section assists very notice-ably the uniformity of drying across the web, but such an enclosure is very undesireable in the case of numerous breaks.

Eliminating Cockles

Another almost universal papermaking prob-lem which absolutely cannot be permitted for on-machine-coating body stock is the matter of cockles. Cockles either will cut as they go through the coater or else they will not receive the proper amount of coating at the depths of the depressions. In the manufacture of uncoated grades the cockles can oftentimes be smoothed out by the calender stacks. We have found that cockles can be eliminated by one or more of the following methods:

1. Free up the furnish so that more water can be used in the head box which results in a less severe drying condition or lower dryer tempera-

severe drying condition or lower dryer tempera-

Adjust the slices and the head of stock so that the best formation possible is obtained. The rolling back of stock on the wire caused by improper head ahead of the slice, can result in cockles.

3. We have found that a short fast stroke for the shake helps reduce cockling.

4. Eliminate the cool dry air currents on the edges of the sheet which not only produces



Double Volute

DIGESTER

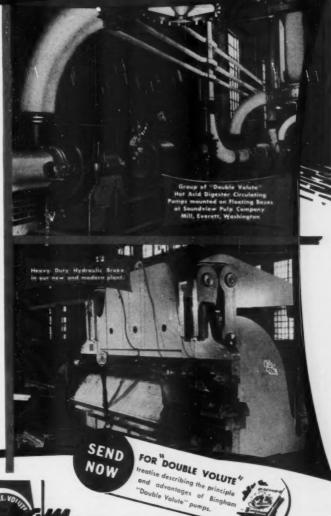
CIRCULATING PUMPS

Bingham Digester Circulating Pumps are of "Double Volute" design. HYDRAULIC RADIAL BALANCE resulting from the "Double Volute" construction permits the shaft to rotate on its true center, there'ay minimizing stuffingbox maintenance and dilution of pumpage due to leakage of sealing liquid. The unit type bearing and rotating assembly is easily removable without disturbing suction or discharge piping or driver.

There are more Bingham Digester Circulating Pumps now in use and on order than the total number of pumps of all other makes used for this service.

A salient feature of Bingham Digester Circulating Pumps is their Floating Base which eliminates the possibility of strains being transmitted to the pump case by suction or discharge piping due to changes in temperature.

All Bingham pumps are furnished with fabricated steel bases which are formed on large hydraulic brakes shown (right). This is typical of the heavy duty equipment in our new and modern plant.



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PUMPS

SINCE

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rough edges as described above but also causes cockling at the edges.

cockling at the edges.

5. Be sure that suction and plain presses are operating properly by having proper pressures, correct crowning of the rolls, felts uniformly clean and open, and proper positioning of the boxes in the suction rolls.

6. Of most importance is the gradual increase in dryer temperatures of the first 6 or 8 dryers so that the sheet isn't dried too rapidly.

7. Watch for localized disturbances of stock on the wire by ridging of the apron, undue backwashing from deckles, and an irregularity on the slice lip.

Moisture Content

In order to have a body stock with an exceptionally smooth surface the sheet is usually put through a calender stack just ahead of the coater. It is important that the body stock contain from 5% to 6% moisture to enable the calender these to sufficiently smooth the about In this den stack to sufficiently smooth the sheet. In this range of moisture content we are immediately faced with a very serious problem. A slight increase in basis weight of the body stock, a drop in the freeness of the stock, or a slight drop in dryer temperature will increase the moisture content of the sheet gring to the stock to a point. tent of the sheet going to the stack to a point where crushing or blackening will occur. The above factors in the reverse direction will

lower the moisture content so that the body stock will have a rough surface, and thus the coated paper will suffer in printing quality. It follows that heavy weight streaks in the web due to wire ridges, improper leveling of the sheet, or bad stock currents at the edges of the sheet, or bad stock currents at the edges of the wire will result in streaks of crushed paper when the balance of the web is at the ideal moisture content of 5½ to 6%. As all of you papermakers know, it is very difficult to have a machine tender run his paper at this moisture content because he has to be on his toes.

Very excellent drying controls have been developed that will automatically keep the moisture content at any desired value, and also record moisture contents. This control will correct for slow changes in basis weight, and stock free-

for slow changes in basis weight, and stock free for slow changes in basis weight, and stock free-ness but it cannot elimiate the crushing of paper due to wet streaks. It is absolutely necessary to have the very best moisture control possible at the calender stack ahead of the coater so as to produce a machine-coated paper of uniformly high quality.

Coating Head Problems

Let us turn to problems arising during the coating, and subsequent drying operation on the paper machine. The coater we will be referring to is one of the conventional roll coaters which applies coating to both sides of the body stock

one of the most crucial problems existing at the coater is the matter of draw control, both to and from the coater. If the draws cannot be changed rapidly and easily, it is almost impossible to put the sheet through the coater after a break without snap-offs. Also a change in the draws during a run can alter the quality of the coated sheet very markedly due to the manner coated sheet very markedly due to the manner in which the sheet contacts one of the press rolls and is subsequently pulled away from a roll. The floopping of the web as it leaves the coater produces marks in the coating that make the sheet unsalable. The amount of wrap that the sheet has on one of the rolls as it leaves the press, which is controlled somewhat by the draw, it were important insetor as enforce pet the press, which is controlled somewhat by the draw, is very important insofar as surface pattern is concerned. Also the long draw from the coater to the first dryer can be very troublesome due to the formation of draw wrinkles as the sheet passes over the first dryer. The water from the coating immediately saturates the body stock, making the sheet very wet and difficult to handle. I believe I spent more operational time on the draw immediately following the coater than on most of the other problems combined. bined.

bined.

A variation in the moisture content of the body stock and a small variation of coat weight will change the draws drastically. This gives us another reason for having the ultimate in moisture controlling equipment on the dryer sections. Also the percent solids and viscosity of the coating dispersion must be controlled within very small limits to prevent variations in coating weight. When four pails of water added to 300 gallons of coating will change the coat weight by approximately one pound, it is obvious the degree of control that is required.

Problems of Deposits

Another interesting problem encountered was of wet felt fibers being deposited on our coating rolls. This occurred especially after a new felt was put on the machine. It didn't seem to make was put on the machine. It don't seem to make any difference how much the new felt was washed prior to starting up, but it would take 4 to 5 hours before the hairs stopped coming. During the time the hairs were collecting, it was necessary to wipe off the coating rolls on the run. We tried wiping off the surfaces of the heat before the coater by more of devising. the run. We tried wiping off the surfaces of the sheet before the coater by means of drawing over spread bars covered with dryer felt and by the positioning of air jets after the spread bar to blow across the surface. This wiping procedure helped slightly but was not the complete answer. We believe that the solution lies in the proper operation of the dual suction press. It seems significant that we were experiencing very short felt life at the presses. Possibly standard plain or suction presses would not have caused this trouble.

The coater certainly does a marvellous job of cleaning off the surfaces of the body stock, by not only picking up the felt hairs but also paper chips and any lose scale released from the dryers. The coater operator has to be constantly watching his rolls for the presence of any irregular materials such as chips or clumps of type of the post the coater product presents the regular materials such as clips of climbs of fuzz. A chip on the coating roll prevents the coating from being transferred to the sheet at this point, and it will keep repeating itself simi-lar to a chip on a calender stack roll. If the coater operator isn't continually on the alert he can spoil a tremendous amount of paper in this

manner.

Grit particles in the coating usually originate in the clay and can be caused by calcined clay agglomerates or the inclusion of dirt in the clay due to improper handling or storage. Unfortunately our clay bins were located next to our coal pile so we were occasionally finding coal dust at the coater. It can be roughly stated that the particles retained on a 300-mesh screen will be classified out at the coater in the roll nips and the concentration of this foreign material will continue to build up in the recirculated coating until the coating rolls will be completely covered with grit. In our case this condition was so bad at times that the surface of the rubber covered with grit. In our case this condition was so bad at times that the surface of the rubber rolls have been pitted sufficiently to require a long sanding job. The presence of grit on the rolls gives the coated sheet the appearance of countless number of holes in the coating layer.

Extreme caution must be exercised in the use of wax emulsions or resin latices in the coating formulations because the stresses under which the coating film is exhibited is so themselves.

the coating film is subjected is so tremendous that many emulsions are broken. The breaking of a wax emulsion will completely plate the coating rolls with wax and thereby cause lost time for the difficult procedure of removing this

All objects such as scrapers or dryer spears, etc., must be kept away from the coater. We only ruined one rubber roll by an accident of only ruined one rubber roll by an accident of this type. It seems as though we were having trouble in keeping the sheet over the machine, probably due to slime holes, or a cracked edge, and the operators were almost exhausted. At the time of the accident the sheet had just been put through the machine and all hands were heaving a sigh of relief. The machinetender, checking over the coater, noticed a piece of broke hanging down on top of the sheet as it left the nip. He decided to save another break by using a sawed off dryer spear to fish out the left the nip. He decided to save another break by using a sawed off dryer spear to fish out the broke. As he approached the broke suddenly the point of the spear disappeared, passing through the nip. Needless to say, the rubber roll was cut so badly that it had to be recovered. On another occasion the coater operator dropped a metal scraper into the nip but very fortunately the thick coating carried the scraper to the edge of the rolls at the overflow point and no damage occurred. and no damage occurred.

and no damage occurred.

Another very broad and technical problem is the matter of the patterning of the coating. This problem is controlled by numberable variables such as solids content, viscosity of coating mix, properties of coating, absorbency of body stock, etc. It would require a long session to cover this subject and I am sure this matter would not be of general interest. of general interest.

Superintendent's Problem

The machine coating operation provides an

ideal situation for the old game of buck-passing,

ideal situation for the old game of buck-passing, due to the close tolerances that must be maintained on both the body stock and coating composition. The machinetender will frequently blame the coating mixture for poor final quality and the color mixing department will find fault with the body stock. It is imperative that the superintendent or assistant be trained in both departments so that any differences can be promptly and correctly settled.

The changing of deckles on the machine-coater is for all practical purposes impossible. If an order with a narrow deckle is made on the machine, indentations will occur in the soft press rolls at the extremities of the sheet so that upon moving the deckle out, heavy streaks of coating will be applied at the positions of the indentations. It will then be necessary to sand the rolls on either side of the low spots to eliminate the streaks of heavy coating. This sanding job will take from 15 to 30 minutes depending upon the depth of the grooves.

Finally, there is the problem of accurate and dependable moisture control at the reel. To obtain a machine-coated sheet with the best gloss and smoothness it is essential that the paper contain from 5% to 6% moisture. At this moisture content the stock is sufficiently pliable so that the maximum in surface smoothness can be realized with a minimum of roll pressure, which means a longer roll life. With a reliable moisture indicator and connecting temperature controller, it is possible to maintain the moisture content within these limits. The moisture indicator and direr temperature indicator and within these limits. The moisture indicator and drier temperature indicator will notify the machinetender of any changes in coating weight. If this control system is faulty, the paper will either be run too dry for maximum quality or too damp so that the paper will be crushed at the super stacks. Here again it is a must that the web of paper be uniform across the deckle in both moisture content and basis weight, otherwise wet streaks or hard ridges will be obtained during the supering operation.

Chemical Engineering Meeting In Germany

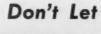
The Achema X - Exhibition Meeting for Chemical Engineering will take place in Frankfurt on the Main, May 18 to 25, 1952. On that occasion a European Meeting of Engineering Chemistry will be arranged. At the same time the Societe de Chimie Industrielle, Paris, time the Societe de Chimie Industrielle, Paris, will hold its 25th International Congress for Industrial Chemistry. In conjunction with Achema X, German Engineers, German Chemists and German Metallurgists will hold meetings. The Dechema Deutsche Gesellschaft fur chemisches Apparatewesen E.V., Frankfurt Main 13, P.O. Box 1337, has sent out plans for exhibition stands, participation terms and registration forms.

Two New Projects For Mills in Quebec

Two projects in Quebec, one involving rehabilitation of a groundwood mill idle for 20 years and the other, establishment of a newsprint mill to serve Europe on the north shore of the St. Lawrence, were being discussed in Montreal this month.

Standard Ore & Alloy Corp. of New York is reported behind a deal for acquisition of the old Quebec Pulp & Paper Corp.'s mill at Chicoutimi from the Quebec government, and Stadler, Hurter & Co., has been asked to prepare plans.

The other project concerns a site near the mouth of the Romaine River, opposite Anticosti Island. Pulpwood supply would be free from the Mingan Seigniory which was purchased by the Quebec government from former owners. Premier Duplessis of Quebec says that one of the men behind this plan is Eduoard Simard, Sorel, Que., industrialist. He states Alfred Huber and R. Troffer of Switzerland are also interested. Mr. Huber is with Wyssen Cableways, manufacturers of logging tackle.



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TOUGH T-18 KNIVES

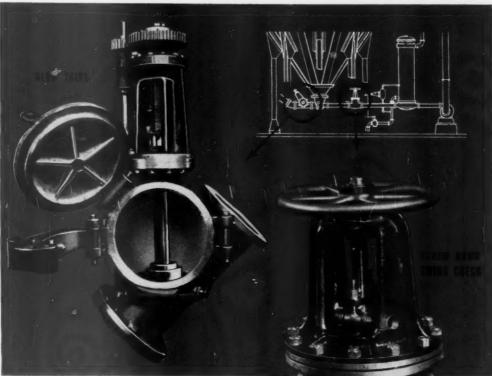
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Promote unobstructed flow

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Greatly increased radiating area means greater cooling efficiency. More important, cooling efficiency stays high, regardless of operating conditions. There are no enclosed external air passages to clog and cause overheating. If oily dirt sticks, just wipe or blow it off. No matter how bad operating conditions are, this motor can be easily kept clean and cool running. Electrical parts are protected against corrosive atmospheres by cast iron yokes and end housings.



Double-shielded, heavy-duty ball bearings require no maintenance in ordinary service under most conditions. However, they can be lubricated without disassembly if required. Double shielding prevents over-lubrication, leading cause of bearing trouble. Rotating seals, where shaft extends through housings, keep dirt and moisture out of bearing chambers. Die cast rotor and interphase insulation are further assurance of long life and low maintenance.



HERE IS A MOTOR that is different from conventional TEFC motors; built with an entirely different cooling system that gives you big savings in lower maintenance, more continuous service and less trouble in the toughest locations. Clogging can easily be prevented in the Allis-Chalmers Type APZ TEFC motor since areas that might collect dirt are exposed and easy to clean.

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CONTROL — Manual, magnetic and combination starters; push button stations and components for complete con-

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January 1952



PULP SALES DIVISION OF BROWN CO. recently met at 150 Causeway 51., Boston to develop contract plans for Berlin, N.H., and LaTuque, Quee., mills, which substantiate a soldout condition through 1952 of bold pulp mills—also for new capacity of Salka-Floc plants. Front row, I to r: H. J. Humphreys, W. L. Gilman, D. P. Brewn (V.P. of Sales), J. J. McDonald

(Division Mgr.), N. L. Nourse (Gen. Sales Mgr.), L. M. Cushing. Back row, I to r: Gilbert LePage, M. M. Shaw, H. S. Chellis, R. M. Cleland, F. C. Stakel, P. M. Goodloe, N. W. Hayes, C. F. Duff, R. K. Loane, M. A. Hescock, R. J. VanNostrand, W. A. Littlefield. Earl Van Pool and Robt. K. Loane were not present.



Send for Bulletin E-108

- Evaporators
 - Pulp Washers Deckers Filters
 - Digester Blow Condensers
 - Surface Condensers
 - Turpentine Condensers Causticizers

REDUCES DILUTION through multistage operation CUTS STEAM COSTS by reducing evaporator loads

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Harvey, Illinois

highest quality high tonnage production

EXCLUSIVE FEATURES OF THE VICTORY BEATER

- 1. Controlled Flow uniform,
- 1. Pressurized bedplates
- 3. Absolute central up to 40 tons bedplate pressures
- 4. Centralized bedplates assure 100% roll-bedplate contact
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- 8. Tailored-to-your-plant, low-cost installation
- 9. Spherical anti-friction roller bearings 10. 1000 gallons per minute
- 11. Highest quality, high tonnage
- 12. All-time record for continuous production!

VICTORY BEATERS are made in two styles: (a) Single Roll units for handling batches as small as 500 pounds. (b) Multi-Roll units with two, three or more rolls for treating 100, 150, 200 or more tons per day on a continuous production basis.

All the facts are available for your examination. Write, phone or wire today for complete information. Ask for Booklet PT [15]

Multi-Roll Controlled Flow VICTORY BEATER

recently set a record that has become the standard of highest achievement in the paper industry. For two solid years, 24 hours a day, 7 days a week, this powerful, triplex high tonnage unit has been operating with no shutdowns caused by mechanical difficulties, and with no appreciable wear on the original roll bars and plates.

This record of continuous high tonnage production is not just a claim - it's a fact! Better yet, is the fact that paper quality showed a remarkable improvement. And this was accomplished with 35% less power consumption than would be required by any other refining method in the world on equivalent papers.

THE NOBLE & WOOD MACHINE CO.

Paper Mill Machinery

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Whether you need synchronous, squirrel-cage, wound rotor, or direct current motor drive,



Large, easily accessible conduit boxes are standard on all Elliott motors. Dripproof box above plus long leads and clamp-on type connectors make connections a simple task, and provide adequate protection. Splashproof type conduit boxes also available, providing same ample size and ease of accessibility.

Select ELLIOTT—because

- Long established reputation—manufacturers of dependable motors and generators for over half a century.
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BLEACHED AND UNBLEACHED CHEMICAL AND MECHANICAL WOOD PULP



A ketchup tank wagon broke a wheel on one of Paul Bunyan's footprints and was wrecked. The resulting stream continues to flow as the Red River of the North.

A reproduction of this incident from the fabulous life of Paul Sunyan—the sixty-second of a series—will be sent on request. It will contain no advertising,

MANISTIQUE MILL SOLD



MANISTIQUE, MICH., PAPER MILL, with six pulpwood grinders and 166-in. modernized Fourdrinier machine, seld by Mead to the Trenton Times Corp., Trenton, N.J. Will revert back to newsprint—its original product from 1916-1943—all for South America. Mill was visited by PULP & PAPER editor on North Michigan tour. At right is famous 300 ft. long Manistique Siphon Bridge, where a main north Michigan highway runs below the level of the river. This design helps support the bridge; creates water power for turbines and grinders in the mill.

One of the well known paper mills on the Northern Michigan Peninsula, at the cross-lake ferry terminal of Manistique, has been sold by The Mead Corp. to the Trenton (N.J.) Times Corp.

After seven years of making ground-wood specialties paper for Mead, the 36-year old mill will revert to its original purpose—manufacturing newsprint. But not for the Trenton papers. All of its 25,000 tons annual output is destined for newspapers in South America to relieve a critical shortage there.

"Our family has had a great interest in South America for years," said James Kerney, editor and publisher of the Trenton paper. "We believe there should be a better understanding between peoples of this hemisphere. This will help our good friends in South America, without taking one pound from any other publisher."

R. T. Hentschell, general manager, and his staff will continue to operate the Manistique mill. Mr. Hentschell has been there since the days when it was making newsprint for the Minneapolis Tribune. The mill was founded in 1916 by the Tribune. F. E. Murphy, owner and publisher of the Tribune was president of Manistique Pulp & Paper until his death in 1940. Matt Smith, who lived at Escanaba, Mich., was president until his death in early 1951. He continued to head both operations at Escanaba and Manistique after they became Mead subsidiaries in 1943.

Mead made groundwood specialties and hanging stock for wallpaper—85 tons a day on the 166-in. machine. They added new wood plant, new Fourdrinier on the R. T. HENTSCHELL (right), who continues as General Manager at Manistique Pulp & Paper Co. He has been Manager since prewar era when it made newsprint for Minneapolis Tribune.



machine, new diesel generating units, modernized screening and finishing and new warehouse. Recently a new woodyard facilitates delivery of truck and rail wood.

The mill employs 170. It is in the heart of a popular resort and hunting area, on the edge of the Hiawatha National Forest.

Michigan Get-Together

The Michigan Division of the Superintendents Association and the Kalamazoo Valley Section of TAPPI will hold their 17th Annual Papermakers Get-Together in Kalamazoo, at the Hotel Harris, Thurs., Jan. 10, at 6:30 P.M. A. E. H. Fair, president, Alliance Paper Mills, Ltd., Toronto, will address the meeting on "The New Challenge in the Paper Industry." F. C. Goodwill, manager, St. Regis Paper Co., Kalamazoo, is to be toastmaster. Tickets may be purchased through Leon H. Mimms, Kalamazoo Paper Co., the Hotel Harris

Becomes V.P. of Operations For All Mead Mills



Donald F. Morris (in picture) of Chillicothe, O., has been appointed vice president in charge of operations for The Mead Corporation, it is announced by C. R. Van de Carr, Jr., Mead president, Howard E. Whitaker who became executive

vice president in April 1951, will continue in that capacity. Mr. Morris, vice president for procurement since 1949, will continue as executive head of the company's purchasing staff.

Mr. Morris has been with Mead 27 years. He joined as a laboratory technician following graduation from Washington and Jefferson College. From 1946 to 1949 he was manager of the Kingsport, Tenn., Division.

Mead's operations are at Chillicothe; at Kingsport, Knoxville, Nashville and Harriman, Tenn.; Escanaba, Mich.; Leominster, Mass.; Philadelphia, Pa.; Bristol and Lynchburg, Va.; Sylva, N. C.; the Brunswick Pulp & Paper Company at Brunswick, Ga., (50% with Scott); Macon Kraft at Macon, Ga., and it is planning a new mill at Rome, Ga.

Buffalo TAPPI Host Dies

Many of the pulp and paper industry engineers and others who attended the Buffalo Fall Conference of TAPPI Engineers a few years ago met and became acquainted with Leon R. Ludwig, who died suddenly in Pittsburgh, Nov. 14 at the age of 47. Manager of the Westinghouse plant at Buffalo and a host to the meeting there, he was since made director of engineering and research for the Westinghouse Atomic Power Division.

Clinton Corn Processing Division's Top Executives

Naming of H. A. Bendixen as vice president and general sales manager of the Corn Processing Division of Clinton Foods, Inc., Clinton, Ia., was announced by R. C. Wagner, president of the Corn Processing Division.

Mr. Bendixen has been general sales manager for the division. He will continue in charge of sales of all products of the Corn Processing Division, and in addition will work into other branches of company management.

This latest change places management and sales control of the Corn Processing Division in the hands of men who have spent most of their business lives with Clinton. They are:

President Wagner, with the company 32 years, working up through operations; Mr. Bendixen, with the company 25 years, mostly in sales; Al Junge, manager of Primary Bulk Sales, 28 years in technical and sales work; and R. A. Swanson, head of Seed and Oil Sales, with the company 19 years.

Dynamic Separation saves Money





Accelator

IN ECONOMICAL WATER TREATMENT, an Accelator occupies but a fraction of the space of an "old-style" treatment plant because it is a single unit ... because it eliminates the previous multiple steps of mixing, sedimentation and coagulation. The unique dynamic separation principle of operation

(continue to next page)

(from preceding page)

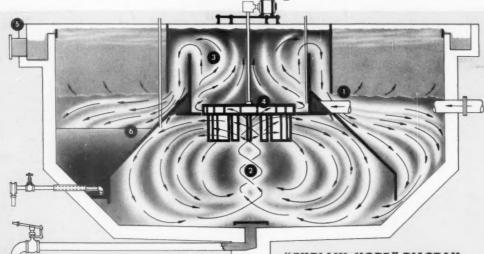


permits the treated water to separate from the top of a downward-moving pool of uniformly sized slurry in contrast to having the treated water filter upward through a suspension of sludge of gradually decreasing particle sizes.

INFILCO INC. * Tucson, Arizona

Outstanding advantages—based on more than two thousand Accelator efficiency-of-operation reports:

- * Faster separation of solids from treated water
- Low-velocity movement of tremendous quantities prevents floc break-up
- * Rapid mixing of incoming water and chemically impregnated slurry
- * Small or large flows have complete contact with slurry
- * Thickened sludge is automatically drawn off
- * Settling-out of solids is prevented



"EXPLAIN-MORE" DIAGRAM

the Accelator basin contains:

- 1. A raw water inlet and distributing duct
- 2. A primary mixing and reaction zone
- 3. Two concentric draft tubes which form the secondary mixing and reaction zone
- 4. A rotor-impeller for mixing and pumping, driven by a motorized reducer
- 5. An effluent launder system
- 6. Concentrators to accumulate and remove excess slurry

The Control of the Co	
TWIN ACCELATOR IT FILTER PLAN If for softwaring, as excellented and filters. TYPICAL ACCELATOR LAYOUT	

SUGGESTED ACCELATOR APPLICATIONS		NO	NO		MATTER	ODOR	REMOVAL	VAL	ICTION	TION
POSSIBLE TREATMENT REQUIREMENTS WATER END-USE	SOFTENING	CLARIFICATION	STABILIZATION	ALKALINITY	ORGANIC M	TASTE AND (COLOR REM	IRON REMOVAL	SILICA REDUCTION	NEUTRALIZATION
MUNICIPAL	X	х		Х	х	Х	X	Х		
PULP	X	X		X	X		X	X		
PAPER	X	×		X	X		X	X		
BEVERAGES		×		X	X	X	X	×		
COOLANT	×	X	×	X	X			X		
BOILER FEED	X	×		x	X		X	X	X	
RAILROADS	×	x					X	W		
TEXTILE	x	x			X		X	X		
CANNERIES		X		X	X	X		×		
BREWERIES		X		X	×	X	X	x		
OIL FIELD FLOODING		×	X		×		X	X		
BRINE DISPOSAL		X	X		×		X	X		
INDUSTRIAL WASTES DISPOSAL AND REFUSE		x	x		x		x			×

OLIN PLANS PULP MILL

Exclusive Report on Project

Another high alpha dissolving pulp mill in the South—this one in that potentially great pulp producing area of North Louisiana-South Arkansas-East Texas—is the plan of President John M. Olin (shown in picture) and his associates in the dynamic Olin Industries Inc., which has a strong demand for high alpha pulps in its explosives, ammunition and cellophane divisions.

Placing a strong stamp of assurance on the project, Olin Industries is merging business and properties with the Frost Lumber Industries, Inc., one of the biggest timber industries of the South, also owners of oil, gas and railroad properties. Thus, Olin is slated to have 450,000 heavily-forested acres in the Southwest to supply a pulp mill in perpetuity, according to an Olin press release. In early December was awaited and expected favorable vote of Frost stock-

holders.

With plans for two more new dissolving pulp mills in the Southeast; with International's Natchez mill doubling production; with engineering moving along for Ketchikan Pulp & Paper's mill at Ward's Cove, Alaska, and Celanese, builders of a new 1951 mill in British Columbia, already planning another one there, tremendous expansion is already under way or completed recently in dissolving pulps. All of the above named are for that grade.

Frost Industries are headquartered in Shreveport, La., with Frank T. Whited as president. Address: P.O. Drawer 1125,

Shreveport.

What Kind of Pulp?

There is no announcement as to what type of pulp mill is planned. Natchez makes dissolving pulp by prehydraulized kraft process with hardwoods. Rayonier uses Southern pine at Fernandina and a sulfite process.

Frost industries produces lumber from 60% shortleaf pine and 40% hardwoods in its four sawmills. This is the wood supply that would be made into pulp. What portion could be waste wood from the sawmills is dubious, since quality wood is generally needed for dissolving pulp.

Here are the facts and figures on Frost mills as obtained directly from the company by PULP & PAPER.

	Capacity Lumber	
Plants	Ft. Per Hr.	Railroada
Huttig, Ark,	31,000 ft	A&LM. MoPac
		MR&T. T&P. KCS
Waskom Texas	18,500 ft	T&P. Y&MV. L&A
Nacominches Tex	15,000 %	MAGE TANK

Where Mills Are Located

The Texas and Louisiana mills are in headwaters of the Sabine and Neches rivers. They lie between the present pulp and paper mills of Springhill, La., and Lufkin, Tex., and are close to them. Mansfield is just about 25 miles south of the Frost headquarters in Shreveport, Waskom, even closer, is just a little way west to the Texas line, and Nacogdoches is not far southwest.

The biggest mill, at Huttig, is operated by the subsidiary Union Sawmill Co. It is just a few miles from the Crossett Industries at Crossett, Ark., below it near the Louisiana state line. Monrie and Hodge mills are near, This is the Ouachita (Wacheetah) Valley watershed.

Olin, just last September, started up a multi-machine cellophane plant at Pisgah Forest, N. C., after purchase of Ecusta Paper Corp., which makes flax cigaret and



fine papers there. It has been buying pulp in the market for the cellophane mill as the Ecusta flax pulp is not desirable for that purpose. Cellophane is in critical short supply. Olin also owns Western-Winchester arms and ammunition; Western and Equitable industrial plants; also Harwid polyethylene film plants.

Frost is to distribute to its stockholders 16½ shares of new Olin common, after a 3 for one split, for each of 59,424 Frost

public held shares.

"Little Spanish Town"

Through Nacogdoches runs the historic El Camino Real, the Spanish highway from Florida to California. Spaniards and Indians traveled this route over two centuries ago. At Nacogdoches stood a Spanish mission, built in 1719. It was only a comparatively short time ago that its ruins were uncovered.

Nacogdoches Mill Now Sells Wood to Springhill

A PULP & PAPER editor traveling in the South recently visited the Nacogdoches, Texas, layout of the Frost operations, and reports it is a possibly desirable site for the Olin pulp mill. There is a log pond and waterway and bayous and tributaries to the nearby Angelina River.

The Nacogdoches layout, he reports, is one of the oldest existing sawmills in East Texas in a town reputed to be the fifth oldest city in the U.S.; originally settled by the Spaniards. C. S. Williams has managed the Nacogdoches mill for over four decades, since its purchase by the Frost interests from the Hayward Lumber Co. It was recently completely remodernized from green end to dry kilns, including construction of a new planing mill department.

Approximately 75,000 acres of forest land are managed out of the Nacogdoches setup alone. In the past, thinnings and tops were sold to the Springhill, La., plant of International Paper Co.

"No Site Selected"—Willis

J. W. Willis, executive vice president of Frost told PULP & PAPER the site for the mill had not been definitely selected, it being stated that several are under consideration including locations in each of the three states.

Huttig, Ark., a small community largely surrounded by forest, is 36 miles from El Dorado, a communications and transportation center well known to the petroleum industry. Conversion of Huttig's sawmill slabs following log barking would provide a worth-while volume of pulp mill ships. El Dorado is drained by Desdemona Bayou. Under the Huttig mill fee titles are extensive acreages of fine timber stands running from Arkansas into North Louisiana. Some adjoin or are near Crossett holdings. Pulpwood thinning on some of these lands was carried on about three years ago.

Waskom, Texas drainage in this general area divides either into the Red River or the Sabine river. Nacogdoches is 93 miles south and west of Shreveport, population, 9,000. It is 20 miles north of Lufkin, where Southland Paper Mills produce newsprint. The 'endency of streams in this general area to diminish to a low level of flow during the summer months has been noted. However, it is an excellent tree growing

section of East Texas.

The small mill at Mansfield, 5000 population, is 38 miles south of Shreveport. To the west, drainage is to the Sabine river. This stream is the subject of a streamflow management compact now being developed between Louisiana and Texas a project in which the rice industry is acutely interested for irrigation water.

The general region in which the company's operations are located is noted for its rapid tree growth, and is already well equipped with paper mills. In the Ouachita valley 66 miles north and west of Huttig is I.P.'s kraft mill at Camden. A little north and east, in the same county, is Crossett. In the adjoining parish (county) south in Louisiana are the two I.P. mills at Bastrop. Only 25 miles south of Bastrop is the Brown Paper Mill Co., at Monroe. Then, 55 miles southwest is Southern Advance mill at Hodge. The I. P. has its Springhill mill about 70 miles due west. Bird & Son have a felt mill in Shreveport.

Olin Industries holds a certificate for \$17,439,000 for a mill without stipulation as to site, it being understood that this will apply to the Olin-Frost undertaking. It is said that a requirement involved in the granting of the permit was that hardwood in substantial proportions be con-

sumed with pine.

Work Begins For MgO Mill in Alaska

How soon Ketchikan Pulp & Timber Co. may be able to get steel and other requisite materials for its DPA-approved \$40,000,-000 high alpha sulfite pulp mill with a magnesia base recovery system at Ward's Cove, Alaska, seems to be a moot question in Washington.

But a recent quarterly report of Puget Sound Pulp & Timber Co., joint principal owner of the new Alaska venture with

American Viscose, says:

"Satisfactory headway is being made. Preliminary engineering work is progressing. Plant and water supply sites are being made ready for construction of mill and dam. Several projects are under way in Ketchikan and surrounding area in preparation for an influx of workers. Highways are being extended and improved. New homes and apartments are being built. School facilities are being expanded. Utilities are increasing their capacities."



All across the North American continent, north to south and east to west, the industry is improving woodlands technics and introducing large scale conservation, reforestation and mechanization.

FORESTRY AND PAPER - FORECASTS

By E. W. Tinker, Exec. Secy., American Paper & Pulp Assn. (Following are highlights of his address before Western Forestry Conference, Portland, Ore., Nov. 28)

Because of the enormous investments required, pulp and paper mills cannot migrate with the exhaustion of supplies of raw materials. As far as I know there isn't a pulp producing unit within the industry that is not at this time planning definitely for permanent future supplies of wood at a cost that will enable them to maintain a competitive position. Under present operating conditions we are consuming something over 23,000,000 cords of wood per year, probably not over 10% of the total wood consumption of the country, but a 10% vital to the maintenance of the country's 6th largest industry.

Future foreign production of pulp and paper will be dependent upon available wood and it is quite apparent that for many years to come European production at least will be definitely limited. Cultural and sanitation standards have made tremendous advances in Europe and to some extent in Asia, and if these continue there should be an export market available to the domestic industry, limited only by the dollar exchange available.

The expansion of the domestic industry will, as in foreign countries, be limited by available wood. However, with our fast growing pulping species and utilization of little used species, I can see no limit to the opportunities.

This has already brought about a necessity for the practice of forestry to a degree that is not generally appreciated. It is interesting to me, as a forester, to hear individuals in management discussing the economics of maximum wood production per acre in close proximity to manufacturing units as contrasted to increasingly long hauls. Most companies in the South have programs, which assure them of permanent life, and there is increasing consideration of the economics of intensive forestry vs. extensive forestry, and consequent long hauls.

In the Pacific Northwest, with your unrivalled opportunity for the production of cellulose per acre per year, more intensive forestry practice will result in maximum production of the most desirable species. There will be a greatly expanded pulp and paper industry and it will be a permanent industry.

Every opportunity for aggressive expansion of private enterprises will be taken advantage of by existing and new industrial enterprises as rapidly as these become economic. All the grandiose plans for public developments, where they are not economically necessary, should be viewed as the result of political expediency rather than as sound developments in the public interest.

JIM MADDEN HEADS AFPI, INC.





JAMES L. MADDEN (left), of Boston, President of Hollingsworth & Whitney Co., has been elected to succeed N. F. McGOWIN (right), of cletred to succeed N. r. MCOWIN (1911), Chapman, Ala., President of W. T. Smith Lum-ber Co., as the new President of American For-est Products Industries, Inc., of Washington, D. C., Industry-sponsored educational agency and coordinator of Keep America Green pro-grams. Mr. Madden was World War II's U.S. Pulpwood Procurement chief. Other AFPI officers were re-elected for 1952.

Resolutions Approved By Forest Industries Council

The Forest Industries Council, policy co-ordinating organization of American forest industries, convened recently at Portland, Oregon, in conjunction with a Western Forestry & Conservation Association conference. Participated in by American Pulp & Paper, American Pulpwood and National Lumber Manufacturer Associations, FIC's decisions on several national problems follow:

1. Forest Service Flood Control Surveys -FIC feels this survey work should be strictly factual in nature and not be tied in with any proposals of federal regula-

tion of timberland.

2. Access Roads-Favors federal legislation authorizing \$30 million annually for five years for main-line access roads to open National and other federal forests, providing forest products for defense and to improve growth conditions.

3. Valley Authorities-Instead of Valley authorities, as exemplified by Columbia Valley Authority, FIC favors developing resources on basis of interests compacts and creation of interstate commissions to

work with federal representatives.
4. Insects and Diseases—Recommends a National forest insect and disease control advisory committee with representatives from the Departments of Agriculture and Interior, FIC, Association of State Foresters, and the general publiclatter named by American Forestry Assn.

5. Recommends Reorganization Act (to carry out recommendations of Hoover Committee Report to reorganize executive government) be amended to require that administration reorganization proposals be acted upon by Congress and hearings be conducted by regular congressional committees.



PULP AND PAPER PARTICIPANTS at Forest Industries Council session in Portland, Ore. Left to right, Vertrees Young, Executive Vice President, Gaylord Container Corp., Bogulusa, La.; FIC Chairman Clyde S. Martin, Chief Forester, Weyerhaeuser Timber Co., Tacoma, Wash.; H. E. Brinckerhoff, Execu-Lyde 3. martin, Unier Forester, Weyernaeuser Immer Co., Iacoma, Wash.; H. E. Brincerhon, Executive Secretary of American Pulpwood Assn., New York; A. B. Recknagel, Vice President and Chief Forester, St. Regis Paper Co., New York; Cherles H. Sage, Vice President, Kimberty-Clark Corp., Neenah, Wis.; Stuart B. Copeland, President, The Northwest Paper Co., Cloquet, Minn.; Sydney Ferguson, President, The Mead Corp., Chillicothe, O.; E. W. Tinker, Executive Secretary, American Paper & Pulp Assn., New York.

TRICKY AUTOMATIC LOG SORTING

A tricky problem of segregation and allocation is almost invariably created when more than one operator makes use of a single channel or river to float his logs.

In Quebec, where three companies are currently floating pulpwood logs on the St. Maurice River, which flows into the St. Lawrence at Three Rivers, the situation might have been extremely complex. A little planning, however, has resulted in a relatively simple arrangement satisfactory to all.

The three companies using the St. Maurice are Brown Corp., whose mill is



Shows relative location of pulp mills discussed in accompanying article.

at La Tuque and which uses 13 ft. logs; Consolidated Paper Corp., with mills at Grand Mere, Shawinigan Falls and Three Rivers, using 4 ft. logs, and Canadian International Paper Co., at Three Rivers, using 8 to 16 ft. lengths.

The owner-company's mark is also hammered into the end of each stick.

The difference in lengths has been a major factor in simplifying the problem, but there was still the task of removing and holding back the 4 ft. logs or letting them continue downstream, according to which mill is doing the sorting.

Several years ago Consolidated Paper installed a stationary-mounted Link-Belt conveyor and sorting system at Shawinigan Falls above its Belgo mill, to sort out sufficient of its own 4 ft. logs for this mill and to permit 8 to 16 ft. logs to continue downstream. Some of the mixture of short and long logs in the river are passed over the sorting machine; the balance is permitted to continue to Three Rivers where the 4 ft. wood is usd by the

2—VIEW OF LINK-BELT stationary-mounted log sorting conveyor unit at Shawinigan Falls. In foreground are some of the 4-ft, logs which have come through channel seen at side of structure.

Consolidated's Wayagamack mill and the long logs by Canadian International.

Brown Corp. installed two pontoon-mounted sorting units to facilitate separation of its 13 ft. logs. These units, like their stationary-mounted predecessor, are performing well in sorting the logs, and they have enabled mills to get delivery faster.

According to statistics prepared by Link-Belt, the two pontoonmounted sorting units handled an average of 7,000 cords or 217,-286 logs (13 ft. long or equivalent) per day of 20 hours for 62 days. Records for 74 days indicated they handled more than 15,-900.000 logs.

With two mechanical sorters in use, 40 men each 10 hour shift were employed at the Brown mill to lead logs over sorters and do all other sorting and moving of logs beyond the two machines. Three men are ahead of the sorting conveyers, beyond which there is the problem of personally sorting the 8 to 16 ft. logs according to whether they belong there or to the mill at the mouth of the river. Before this apparatus with its Link-Belt pontoon-mounted sorting conveyer units was installed, from 150 to 175 men were required to do the sorting.

As for the actual process of sorting 4 ft. lengths from the longer logs, each of the pontoon-mounted units is supported on four pontoons tied together by steel bridges both longitudinally and transversely. Mounted longitudinally on the structure is an inclined log conveyer measuring 60 ft. long by 20 ft. wide, with foot end submerged to allow logs to be floated onto the conveyer. The conveying mechanism itself consists of five parallel strands

1—VIEW OF LINK-BELT stationary-mounted log sorting conveyor at Shawinigan Falls—showing discharge end. Two men atop bridge with pike poles in hand are watching sorting.



3—ACTION SHOT at discharge end of one of 2 Link-Belt pontoon-mounted log sorting conveyor units showing "live" roll and how 4-ft. logs dropping through gap are separated from 8 to 16-ft. logs bounced off by live wire after spanning gap.



of sturdy SS class steel chain with straight side bars, tied together transversely on 5 ft. centers by heavy steel cross bars occurring at 2 ft. intervals throughout the length of the conveyer. A certain distance beyond the conveyer head shaft is a 25 ft. long μ ower-operated roll which has a considerably faster peripheral speed than the chain speed of the conveyer.

The gap between the conveyer head shaft and live roll allows 4 ft. logs to fall through while the 8 to 18 ft. lengths are carried across the gap and bounced off. The live roll is of welded corrugated construction, serving to bump the longer logs quite rapidly so that any 4 ft. pieces resting on top will drop between the head shaft and this roll.

Long logs coming up crosswise of the conveyer may drop

4—ANOTHER ACTION SHOT showing 8 to 16-ft, logs bounced off by live roll after spanning the gap. Note use of water sprays to produce circulation of water for floating logs away.



through the gap but can, by means of partitions, be discharged back into the clear water in front. The 4 ft. logs are occasionally carried across the gap, but only when they are on top of an exceptionally heavy load. Only about 1% of 4 ft. pieces are passing over the live roll. These can be picked up at the Three Rivers mill which also uses 4 ft. logs.

When the residue of logs arrives at the point where the St. Maurice empties into the St. Lawrence, the separation is simple, because Consolidated claims all 4 ft. logs and the balance goes to International.

A checkup of logs according to identification marks is provided for the 8 to 16 ft. logs by personal inspection at jackladders. Checking of wood cut, floated and taken in at the mills is fairly exact.

5—THIS IS APPROXIMATELY 50% of load of logs that may be brought up by conveyor of Link-Belt log sorting units.



RAYONIER'S PROJECT IN WEST

Future of wood production on the Far Western coastal area of Washington state, and particularly in much of the Grays Harbor area, is now dependent largely on good management of second growth timber, says Len Forrest, land division manager for Rayonier Incorporated, at the Hoquiam, Wash., headquarters of the timber and land divisions. This company now has a 105,000° acre authenticated Grays Harbor Tree Farm where it is carrying out progressive forest policies.

As with any business, timber management for the future must be based on a complete inventory of current supplies and growing areas, "making a nose count of the trees," as Gilbert Liming, Rayonier forester, put it.

Right now, Rayonier is engaged in one of the most extensive "tree nose counts" ever conducted. The tree census idea is not new, but some of the methods used in making the census were untested ideas a few years ago.

The inventory now being taken by Rayonier Incorporated starts with aerial photos and winds up with leg work over thousands of acres of tree growing land. Technically, the use of the aerial photos, their correction by a mechanical plotter, and interpretation of the data is "photogrammetry," a word that in itself would

have baffled the old-time logger.

Eventually, the aerial photography project, started last summer, will cover every acre of Rayonier's holdings, These aerial photos, which look like mottled wallpaper to the casual viewer, reveal a world of information to the trained forester like Myron Savage of Rayonier's staff. He can peer at the photo through a three-dimensional viewer and get a pretty good idea as to the number of trees in the area photographed, their species, size, and other data vital in a timber inventory. After studying the photographs, earthbound foresters check the information sample plots on the ground. "With these photos," he explained, "we can cut down the amount of time-consuming sampling. Less ground cruising needs to be done to obtain the same degree of

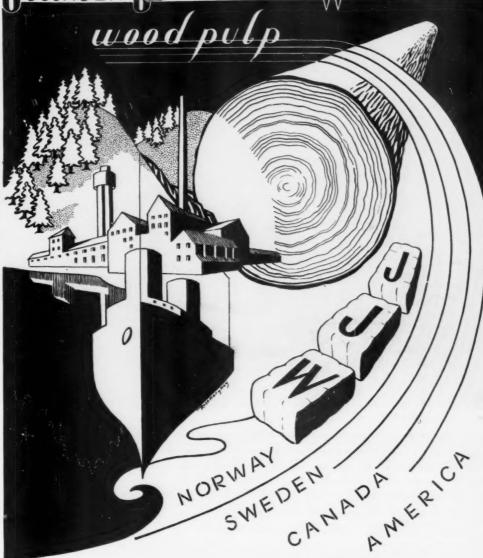
The aerial photo surveys still are partially experimental, but indications are that they'll provide most of the information for the all-important inventory that forms the basis for managing the timber crop.

But surveys and interpretations aren't forest management in themselves. They have to be followed up with work projects indicated by the studies. Some of the projects now being carried out by Rayonier Incorporated—with the part-time aid of forest management seniors from the University of Washington—test plots for different kinds of trees and in different types of growing sites. Most of these plots are handled in a method similar to that used by Rayonier foresters and university students on the Port Orford plot.

One of the continuing projects of the forestry students, who also worked with Rayonier two years ago, has been a study of a square acre plot of Port Orford cedar planted about 22 years ago when the Polson Logging Company owned the land that now makes up part of the Rayonier holding.

Because every species of tree reacts in a different way to various management practices, the company has set up many test plots for different kinds of trees and in different types of growing sites. Most of these plots are handled in a method similar to that used by Rayonier foresters and university students on the Port Orford plot.

The Port Orford plot has been divided into quarters, with one quarter left natural, one pruned, one thinned, and another pruned and thinned. From the study of these quarters, information can be JOHNSEN JORCENSEN & WETTRE LTD.



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TELEGRAMS: "WETTRE, LONDON."

EDINBURGH

MANCHESTER



Photos courtesy of Jim Wallace, Aberdeen World.

PROGRESSIVE FOREST POLICIES OF RAYONIER, INC., photographed at their Grays Harbor Tree Farm: 1. Professor Robertson of the University of Washington in a one-acre stand of Port Orford cedar; 2. Second growth of Port Orford cedar stands among stumps of trees cut 25 to 30 years ago, 3. Dick Rising, U. of Washington forestry student, measures the growth of a tree farm tree in connection with a study project of the tree farm plot of Port Orford. 4. Bill Turner of Aberdeen, Wash., left, and Mostle Balotin of Palestine, both U. of W. students, study an aerial photo of Grays Harbor tree farm of Rayonier, Inc. 5. Three U. of Washington students make corrections on aerial photo maps with a radial planometric projector.

obtained as to the most effective management techniques. With the study of the technique, an account of the cost of the work in man hours and money is made as a guide for determining whether this or that management practice can be carried out and still be made to pay for itself.

Over the whole plot, trees were measured and numbered before thinning and pruning operations began. This provides an accurate base for computing growth after later remeasurements. Permanent camera stations in the plot provide another means of checking growth.

The 22-year-old trees haven't matured enough for foresters to be sure whether Port Orford cedars, a highly valuable timber species, can figure in the Olympic peninsula's lumber potential. But when the trees on the acre do mature, they'll probably be the best-charted trees on the

peninsula, with pedigrees dating back to a joint project of Rayonier Incorporated and the university's school of forestry.

Good Harvesting Signs

Focusing of attention of nearby owners on good cutting practices is effectively achieved through signs developed by Southern Pulpwood Conservation Association, according to Henry J. Malsberger, forester-general manager. Over 600 of them are in service.

The slogan "Harvested Wisely" appears across the top of the sign; with "Prevent Fires" in the lower right hand corner. The sign is made of milk bottle paper stock in two colors, red and green, by the silk screen process.

Man uses paper more than any other commodity except water. You are in an indispensable industry.

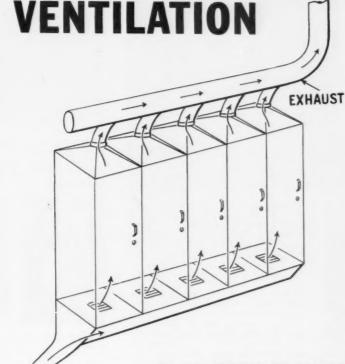
Pulp Mills Hit By Ontario Ruling

Operators of pulp and paper mills in Ontario are reported to be somewhat critical of a new directive issued by the provincial government with a view to segregating saw logs from pulpwood so as to augment the supply of raw material for the lumber industry.

In the case of sulfite and newsprint companies log lengths 12, 14, 16 and 18 feet long plus 4 inch overrun and with diameter of 9 inch (small end) for spruce, balsam, white and red pine must be separated for lumber, ties, etc., and the same length and 7 inch small end of jackpine must be separated for the same purpose. Similar regulations have been made applicable to sulfate and kraft mills with minor variation.

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SIMPSON BUYING EVERETT MILL



WILLIAM G. REED, (left) of Seattle, Chairman of Simpson Logging Co., which is purchasing Everett Pulp & Paper Co., and WILLIAM J. PiLZ (right), former President of the Everett company, who is retiring.

Purchase of the 60-year old Everett Pulp & Paper Co., Lowell, Wash., by 56 year old Simpson Logging Co., one of the major logging and timber products industries of the Far West, was being carried out as this issue went to press.

Purchase has been fully agreed upon. No important integration of wood utilization for the two companies was immediately anticipated. The Everett mill, long famed as the only soda pulp mill in the Far West and a major producer of book papers, has actually become what might be described as a modified kraft mill. It pioneered a few years ago in using veneer plant waste wood chips, and now it uses about two to one, Douglas fir over cottonwood, its former major raw material.

Simpson's operations are principally in the southern part of the Olympic Peninsula, about 120 miles southwest of the Everett mill by land; somewhat shorter by water route on Puget Sound. Simpson has a Fiberboard Division, making insulating board, at Shelton, Wash, its main operations. Lumber, plywood and door plants are in Shelton and McCleary, Wash., Klamath Falls, Ore., and Arcata, Calif., employing more than 2,000.

Simpson will complete a \$3,000,000 improvement at Everett, on 3 machines, and including new steam plant, enlarged bleach plant, digesters and evaporators.

The Everett mill was organized and built in 1891 by Rockefeller and other





THOMAS F. GLEED (left), of Seattle, who recently became President of Simpson Logging Co., and ANSON B. MOODY (right), V. P. at Everett Pulp & Paper, who continues as General Manager of the paper mill.

eastern interests. It employs 600 persons; is listed as making 70 tons of soda pulp, 20 tons de-inked pulp and 80 tons of paper per day. The latter include offset book, text, E F book, eggshell and super book, label, bond, bristol, flat and folded writing, duplicator, mimeograph, tablet, school, note, fillers, machine rolls, pad, etc.—"Rely on Everett" brands. Its "blue books" for college exams are well known.

William G. Reed, of Seattle, former Simpson president and now chairman, met the staff at Everett. They were assured there would be no changes. Thomas F. Gleed, former Seattle banker, recently became Simpson president.

Anson B. Moody, with the Everett mill since 1927, will be general manager. He and Mr. Reed discussed plans with unions and employes.

William J. Pilz, president and manager at Everett until this transaction, and brother-in-law of Mr. Moody, has recently been inactive because of health, and has retired. William Howarth, fatherin-law of Mr. Pilz and Mr. Moody, and A. H. S. Jordan became owners of the paper company when it was founded and operated it for many years. The paper machine was brought around Cape Horn by boat in 1892, before there was rail service, and started at 15 tons a day. The Jordan interest in the company has been held in trust by Everett Trust & Savings Co., which represented stockholders in the sale.

EQUIPMENT FOR NEW KRAFT MILL

A 156-inch Rice Barton Minton vacuum drier with a line shaft drive is being built for the new 300-ton bleached kraft market pulp mill being built on the Snohomish River at the north outskirts of Everett, Wash., by Weyerhaeuser Timber Co., Pulp Division, according to Howard Morgan, manager of the division.

The design and construction of the new Everett mill is under direction of Gerald F. Alcorn, construction engineer, who in his long career with Weyerhaeuser has held such various posts in both Everett and Longview as technical director, plant engineer, kraft mill superintendent and acting mill manager. The construction engineering department of the Pulp Division under his direction is also designing

and engineering the new bleached kraft pulp and sanitary board mill being built in Longview and which is expected to operate in the early summer of 1952.

The pulp drier ordered for Everett is almost a duplicate of the Rice Barton drier now being used in the sulfite mill but will have 48 driers, 4 more than the present machine.

The completion date of the Everett mill is predicted for the middle of 1953 and when completed will be operated under the direction of R. J. LeRoux, manager of the sulfite mill at Everett.

C. L. Fargo, for many years an associate of O. C. Schoenwerk, is working with Mr. Alcorn. Several of the other engineers are men who have gained their

experience in various construction jobs of the Pulp Division.

Other equipment for the new Everett mill—across town from the present sulfite mill—includes a continuous process 5-stage bleach plant of Improved Paper Machinery design with six Impco 9½ x 16 ft. washers. Impco also is supplying four 11½ x 16 ft. washers for brownstock washing and six Lindblad (Swedish) circular pulp screens.

A Babcock & Wilcox 350-ton recovery unit and B & W 150,000 lbs. per hr. power boiler are other major units ordered.

Washington Iron Works of Seattle is supplying two high speed new type baling presses of 1,000 tons each, for automatic baling of pulp. There will be six digesters of 4,500 cu. ft. capacity each and chemical liquor making, chemical recovery and power equipment.

The mill is being built alongside Weyerhaeuser's big Everett sawmill and will be coordinated with this and other Weyerhaeuser sawmills in the area for integrated use of wood, principally fir. The Everett mill is being equipped with a Sumner Iron Works "Bellinghamtype" hydraulic big log barker.

IN PACIFIC COAST





DENNIS F. CRITZER (left), a native of Virginia, is Superintendent of the Paperboard Division, Puget Sound Pulp & Timber Co., Bellingham, Wash. Was exposed to camera when he attended his first western industry meeting in Seattle. He went west from Container Corp. of America, Wilmington, Del., where he was Supt., worked 12 years. Before that he was with West Va. P & P and Northwest Paper Co.

JOHN K. DAVIS (right), born in Ligonier, Penn., has been Acting Paper Mill Supt., Crown Zellerbach, Port Townsend, Wash., kraft mill for past two months, while Supt. Harold Quigley has been visiting Eastern and Southern mills. Mr. Davis, regularly Tour Boss in Paper Mill, has been at Townsend for 23 years.

A Taft to Address Supts.

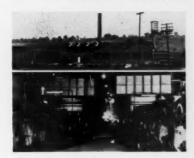
Charles P. Taft, brother of Senator Robert A. Taft, Republican presidential candidate, was scheduled to address the Miami Valley Superintendents Division, Jan. 24, at the Manchester hotel, Middletown, O., on "Organization." He is a Cincinnati attorney.

\$7,000,000 Expansion

St. Lawrence Corp. has authorized expenditure of about \$7 millions on improvement and expansion of the East Angus, Que., mill of its Brompton subsidiary. Manufacture of kraft paper is to be increased.

TENNESSEE PAPER MILLS

HAS DOUBLED BOXBOARD OUTPUT SINCE 1945



PRINCIPAL BUILDINGS OF TENNESSEE PAPER MILLS on Mill Road, Chattanooga, Tenn. Below, its two Horne cylinder machines with Ross Engineering hoods.

Formed in 1917 to serve, in particular, the "Little Saar," important industrial section in 150 mile radius from Chattanooga, and Southern converters, in general, the Tennessee Paper Mills Inc., has maintained and advanced its position by careful production methods and technical advances in turning waste paper into boxboard and specialties. It was organized by John Stagmaier and A. M. Tomlinson.

The mill is located on a 40-acre site on the Tennessee river, from which water supply is drawn by three Pomona (Fairbanks-Morse) 2400 GPM pumps. Mill capacity doubled during not-way years

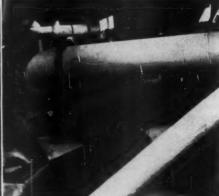
pacity doubled during post-war years.

Entire output of folding and set-up grades of boxboard and specialties is distributed to independent box makers throughout the South. An average of 18 carloads of waste paper is received daily from Southern dealers, with mill facilities for 24 carloads, and shipping of 12 cars of finished products simultaneously. The mill uses some virgin pulp in higher grades. In 1946 it was licensed to use the Champion process of machine coating.

Sixty percent of shipments are by rail, the balance in a fleet of motor trucks. Skids and pallets are used.

The plant is kept modern. It is sprinkled throughout. Post-war improvements included a first class machine shop and 20,000 feet of space for locker room.





ONE OF TWO HERMAN CLAFLIN REFINERS with 200 hp. Westinghouse drives in Tennessee Paper Mills at Chattanooga, shown at left. At right is new type Coal Pulverizer furnished by Combustion Engineering-Superheater Inc.

The mill has two 8-cylinder J. H. Horne & Sons machines, both 132-inch (122 inch trim on .024 or heavier). Production ranges from 250 to 260 tons per day but capacity is 295 tons. The #2 machine was started in July, 1949, at which time an entirely new crew was broken in by aiternating crews on machines. The newer machine has Vic-Kery doctors, a 124-inch Cameron rewinder, and a 350 HP Westinghouse motor to supply power. Both machines have Ross Engineering hoods and systems.

Mill equipment includes a 16-foot Shartle Hydrapulper, 14 #1 Miami-Shartle jordans, two Hermann Claffin refiners, one Shartle breaker beater, eight other beaters. Shartle duplex and triplex plunger pumps move stock to the new machine; with modern Shartle and quick-opening DeZurik valves fitted on stock handling equipment. The powerhouse is excellent, being equipped with Combustion Engineering-Superheater Inc. boilers and including that company's new type coal pulverizer.



HUBERT J. STAGMAIER (left), Pres. and Treasurer, and W. MAX FINLEY, Exec. Vice Pres. and Gen. Mgr. of Tennessee Paper Mills.

C. E. Finley is chairman of the board; Hubert J. Stagmaier, president and treasurer; W. M. Finley, executive vice president and general manager; L. T. Murphy, vice president and production manager; John S. Fletcher, secretary (attorney); O. R. Fitch, chief engineer; C. H. Hale, ass't. treasurer; Carl Travis, ass't. superintendent and Clint Worley, millwright foreman.

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News and Notes from

EQUIPMENT AND SUPPLY COMPANIES

DEZURIK SHOWER CO., because of substantially increased production of DeZurik valves and paper mill equipment, has moved into new office and engineering quarters at Sartell, Minn., according to David DeZurik, president. Lower floor of 2-story, brick-veneer building is occupied by administrative and sales offices; second floor, engineering and technical activities. An earlier office was incorporated into the new

DILTS MACHINE WORKS, Fulton, N.Y., announces a new Kohler Model 40 Plastic Winder, continuous, automatic and especially suited to web materials that must be wound with extremely low tension values, such as plastic film and sheeting. Max. roll diameter, 24 in.; web or ribbon width, 84 in.

C. HUYCK & SONS, Kenworth

Mills, Rensselaer, N.Y., through Pres. Grenville R. Holden, announces election of J. TRACY COLBY as vice president in charge of blanket and cloth sales. Graduate of Lowell Textile School in 1916, he joined Kenwood Mills in 1917, entered sales five years later and advanced to director of cloth and blanket sales in 1948. His duties remain essentially the same ... MOUNT HOPE MACHINERY CO. Taunton, Mass., formally announced designation of Dan E. Charles Agency as its field representative in Idaho, Oregon, Washington and British Columbia, with offices at Jones Bldg., Seattle 1, Wash. Mt. Hope's expanders for removing wrinkles

and spreading paper, recision guiders,

weft straighteners and other equipment

will be handled by them. Mt. Hope Ma-

chinery has issued a service plan bulletin,

available by writing the company or

agency, for cleaning and oiling plans....

HOOKER ELECTROCHEMICAL CO.,
Niagara Falls, plans to build a new \$10,000,000 plant for the manufacture of chlorine and caustic soda at Montague, Mich.,
it is announced by R. L. Murray, Hooker
president. The plant is to be in operation
by the end of 1953, with a yearly production rate of approximately 100,000 tons of
all products. Output is to serve Midwest
industry. Design will be by Hooker's engineering department. Total plant area,
including a brine field, comprises over
400 acres.

SMITH & WINCHESTER MANUFAC-TURING CO., South Windham, Conn., has announced the installation of its new 86" Model E undercut trimmer at the Valley Paper Co., Holyoke, Mass. This new model cutter has side loading backtable, motor-driven backgauge with push button controls.

ANTARA PRODUCTS, a division of General Dyestuff Corp., New York City, will henceforth be known as ANTARA CHEMICALS, according to John C. Franklin, executive vice-president of GDC. The name change is to describe





O. W. HEIN (left), newly elected Vice Pres. of The Black Clawson Co., Hamilton, O., and member of its Exec. Committee directing parent firm, divisions and subsidiaries. He is also appointed Gen. Mgr. of Shartle Bros. Machine Co. Division at Middletown, O. He had been Asst. Plant Mgr. of Shartle and Director of Research and Dvpmt. for entire company.

EUGENE J. WARD (right), appointed Vice Pres. In Charge of Sales, Cameron Machine Co., Brooklyn, N.Y. Joined Cameron 14 yrs. ago, for past year has been Gen. Sales Mgr. Attended N.Y.U. and Hofstra College, completed studies at Brooklyn Polytech in pulp and paper. Other Cameron promotions: LEONARD ROCKSTOM—to V.P. in Charge of High.

more accurately the activities of the company in handling sales and services of acetylene chemicals, intermediates and allied products. At the same time it was announced that a \$20 million expansion for Antara was to begin. Manager is Harold G. Shelton, with technical division under Dr. Chapin Stevens.

PENNSYLVANIA SALT MFG. CO., Philadelphia, Pa., has announced it will add new facilities to its plant at Calvert City, Ky., including an electrolytic chlorine-caustic soda unit, at estimated cost of \$8,000,000. This is the second step in Pennsalt's program, the first of which was the completion of a hydrofluoric acid and

EXPANDED PRODUCTION AND SERVICE

H. W. Butterworth & Sons, of Bethayres, Pa., recently completed a considerable expansion of its operations for Butterworth calender rolls. Here is shown with executives, a sixth generation of the Butterworth family in the business—nephews of the President. L. to r.: J. Ebert Butterworth, Vice Pres. and Secretary; J.

sulfuric acid plant at this location in 1949. The chlorine-caustic soda unit will use the DeNora electrolytic mercury cell-a departure from other Pennsalt plants. Op-Broadway, New York City, has recently completed arrangements to handle forest products equipment lines of SUMNER IRON WORKS, Seattle, Wash., in the Northeast. Among the equipment to be handled by Babcock will be Sumner's line of chippers, refuse hogs, debarkers, shingle mills, and pulp and paper machinery. Headed by C. L. Babcock, the company has featured services to the forest products industry.

WARREN STEAM PUMP CO., Inc., Warren, Mass., announce that all business formerly transacted through Parkman A. Collins Co., 75 Federal St., Boston, will be handled hereafter by: Warren Steam Pump Co., 6 Leonard St., Belmont, Mass. Parkman A. Collins has been appointed district manager in charge of the new office and Frank W. Amadon, Jr., formerly with Collins Co., will be a direct representative of Warren Steam Pump Co. Also, Philip J. Murdock, Jr., will continue to represent Warren in Northern New England.

RELIANCE ELECTRIC & ENGINEER-ING CO., Cleveland has promoted John L. Fuller to the new post of manager of research and technical services, in line with expansion of these services, said William R. Hough, v. p. for engineering.

Dr. H. Wyatt Johnston Resigns as Sutherland V-P

Dr. H. Wyatt Johnston has resigned as vice president of Sutherland Refiner Ltd. and will act as consultant to the Sutherland interests in Canada, U. S., and foreign countries. He will also be available as consultant to this industry generally. His address is 4048 Gage Road, Montreal.

Ebert Butterworth, Jr.; Harry W. Butterworth, Jr., President; DeHaven Butterworth, Vice Pres. in charge of Sales; John H. S. Spencer, Exec. Vice Pres. and Treas.; DeHaven Butterworth, Jr. Also serving an apprenticeship but not shown is John H. S. Spencer, Jr.





EASTERN NOTES

DAVID 1. EDWARDS, vice-president and director of Perkins-Goodwin Co., retired on December 31, 1951. His resignation, which was necessitated by ill health. was accepted with a great deal of regret by his board of directors, who realize the deep loss his long and close association with the industry will mean. Dave Edwards, as he was known throughout the trade, joined Perkins-Goodwin at 16 as an office boy, working his way up through the organization. Posts he held in his climb upward included manager of paper department sales in 1938; director in 1942; and vice-president in 1947.

NORMAN W. WILSON, who started with Hammermill Paper Co. in Erie, Pa., at the age of 16 as a mail boy and clerk and worked his way up to president, reached his 50th year with Hammermill on Nov. 9. He worked up through payroll, billing, traffic and sales departments to first v. p. and general manager by 1929, and in 1940 succeeded the late Ernest R. Behrend as president. The Behrend brothers who founded Hammermill are still represented by Dr. Otto Behrend, treasurer.

NEW DIRECTOR of Hollingsworth & Whitney Co., Boston, Mass., is CURTIS M. HUTCHINS, of Bangor, Me. Mr. Hutchins is a director of a number of companies, including the Bangor and Aroostook Railroad Co., is a former president of the American Pulpwood Assn., and was in charge of pulpwood production for the War Production Board in World War II. He succeeds WALTER B. MERLIN who has retired after 68 years with H & W.

WILLIAM S. STUHR was re-elected president of United Board & Carton Corp. Syracuse, N.Y., recently. MORRIS KAY was re-elected chairman of the board and PAUL DE GATEGNO and HERMAN TUBLITZ were re-elected vice presidents. United Board & Carton owns and operates carton plants in Syracuse and Victory Mills, N.Y., and Springfield, O., and paperboard mills in Lockport and Thomson, N.Y., and Urbana, O.

ENRIGHT A. ELLIS, president and treasurer of Downington Manufacturing Co., Downington, Pa., has been appointed a member of the publicity committee of the University of Maine, Pulp and Paper Foundation.

CANADIAN AND AUSTRALIAN NOTES

PRENTICE BLOEDEL, vice-chairman of MacMillan & Bloedel, Ltd., Vancouver, B.C., has been elected a director of the Bank of Montreal.

SYDNEY HANSEL, president of Hansel Engineering Co. of Vancouver and Seattle, designer of hydraulic barkers, visited Sweden and the United Kingdom during November.

MACMILLAN & BLOEDEL EXECS





CLIFFORD CRISPIN (left) is now Vice President of the newly created Pulp Division of MacMillan & Bloedel, Ltd., Vancouver, B.C., new merger firm. L. G. (LARRY) HARRIS (right) is Mr. Crispin's successor as Manager of Harmoc bleathed kraft pulp mill near Nanaime, B.C. Ne was; Asst. Mgr. Mr. Harris was with Sorg, Brompton at Red Rock and Bloedel kraft mills in past. JAMES PETRIE continues as Manager of Port Alberni mill of MacMillan & Bloedel.

J. A. CRAIG, general manager of Sidney Roofing & Paper Co., Victoria, B.C., has been appointed a director of the parent company, the E. B. Eddy Co., Hull, Que., and promoted to the vice-presidency of the Sidney organization.

A. GEORGE JACQUES, formerly general manager of the St. Lawrence Paper Mills, died recently in Montreal, aged 55. His first important appointment in the industry came in 1934 when he was made general superintendent of Lake St. John Power & Paper Co. at Dolbeau, Que., becoming mill manager the following year. He became resident manager at Three Rivers when the Lake St. John mill was merged with St. Lawrence.

C. W. E. LOCKE, former resident manager for Pacific Mills, Ltd., at Ocean Falls, B.C., has been appointed manager of the Domass and Great Central divisions, including lumber and shingle mills but excluding pulp mills, for MacMillan & Bloedel, Ltd. He had been chief engineer for Bloedel, Stewart & Welch prior to that company's merger with H. R. MacMillan Export Co.

HAROLD S. FOLEY, president of Powell River Co., declared British Columbia's pulp and paper mills have the best safety record of any industry in the province. J. P. ORMSBY is the new mill manager

of St. John Sulphite Ltd., in Fairville, N.B. He succeeds J. M. FEAR, who resigned recently.

J. L. SOMERVILLE, chief chemist, Australian Newsprint Mills, has been touring Canada and the U.S. and Europe during the past three months visiting pulp and paper mills.

S. C. JOHNSON, recently appointed supply engineer for Australian Paper Mills, has returned to Australia from Europe where he purchased equipment for his company's construction program.

Recent appointments and promotions at Australian Paper Mills are: C. S. GIL-CHRIST as chief chemist at Botany; T. J. YOUNGER as manager to Melbourne; W. G. GARDNER as paper mill superintendent at Botany; R. V. D. EMPSTER as mill manager at Broadford; G. H. WILTSHIRE as production manager at Fairfield, and J. O. THORNBORROW as

assistant paper mill superintendent at Maryvale.

O. W. DEXTER, Seattle, president of International Pulpwood Supply Co., Vancouver, B.C., presented long-service awards to several employees of the company recently. International Pulpwood Supply Co. maintains a chipping plant on the Fraser River.

GEORGE PERCY, Jr., has been appointed log production superintendent for Alaska Pine & Cellulose Ltd. He formerly headed the Jordan River operations of the subsidiary Western Forest Industries.

R. F. CALDWELL, secretary-treasurer of the E. B. Eddy Co., Hull, Que., has been appointed a director of the company's subsidiary Sidney Roofing & Paper Co.

Hudson Declicates New Southern Unit

Hudson Pulp & Paper Corp., of New York, dedicated its new \$10,000,000 lightweight kraft high speed producing unit in its Southern Division at Palatka, Fla., Dec. 6, with Gov. Fuller Warren on hand to laud Hudson and other paper companies for their part in Florida's growth. He predicted more paper expansion.

The new pulp and paper unit boosts daily production to 400 tons, about 85% to be converted at Palatka into multiwall, other bags, wrap, gummed tape, etc.

A new 236-in. Pusey & Jones Fourdrinier Yankee machine has a new suction transfer arrangement which is credited with speed-ups of newer machines. It will make both machine-finished and machine-glazed papers. It has a wire drive roll in addition to couch roll, smoothing press between 1st and 2nd drier section, 12 ft. Yankee between 2nd and 3rd and is driven by General Electric electronic amplidyne multiple generator sectional drive.

Two Victory Beaters at Palatka

Two additional multi-roll controlled flow Victory Beaters made by The Noble & Wood Machine Co., Hoosick Falls, N.Y., have been installed in the new \$10,000,-000 kraft pulp and paper mill of Hudson Pulp & Paper Corp. at Palatka, Fa.

The two new triplex units are duplicates of the three-roll Victory Beater installed in Palatka in 1949. Officials of the original Victory Beater has had no shut-downs caused by mechanical difficulties, and that bed-plate and bars show only small wear.

Hudson has also four new Noble & Wood Unifiners and nineteen Noble & Wood propeller agitators.

D. J. Murray Gift To University of Florida

The University of Florida, Gainesville, Fla., is recipient of a gift of \$1,000 from the D. J. Murray Mfg. Co., Wausau, Wis., for use in promoting research for the pulp and paper industry of the South. Fred C. Boyce, president of D. J. Murray Co., stated it was presented as a manifestation of good will of the Superintendents Association, especially its Southern and Southeastern Divisions, and in recognition of William H. Brydges, a trustee, past president and life member of the Association.





D. G. ROGERS (left), who has become President of National Analine Division of Allied Chemical & Dye Corp., New York. He had been Executive V. P. and will succeed E. M. Maxwell, who has been absent because of illness.

SAM T. ORTON Jr. (right), President of Orton Corp., Fitchburg, Mass., which company has been appointed Eastern seles representative of Morden Machines Co. Mr. Orton has had experience with Morden Stock-Makers and went west recently to discuss the new Slush-Maker.

Rayonier Finances Long Term Expansion

Rayonier Incorporated has arranged a long-term loan of \$40,000,000 from the Prudential Insurance Co. of America, interest at 43%, maturing Dec. 1, 1971, with optional provisions for prepayment.

Clyde B. Morgan, president, stated proceeds would be used to pay off the existing loans of \$10,250,000, and provide funds for future expansion.

Rayonier has under construction expansion projects at four mills which will add substantially to capacity by mid-1952. Further enlargement of facilities which this borrowing is to finance will be in keeping with a long-range policy of continued expansion to meet growing demand for cellulose products. Although the company is in a strong financial condition, directors considered this financing advisable, since Rayonier will be spending substantial sums on expansion for several years.

Mill Group on Trip

A party of four officials from the Fort Howard Paper Co., Green Bay, Wis., made a trip in late November to the market pulp mills of the West. This mill is speeding to completion a new Fourdrinier tissue machine, virtually built entirely by their own engineers and shops, except the Yankee dryer and a few items.

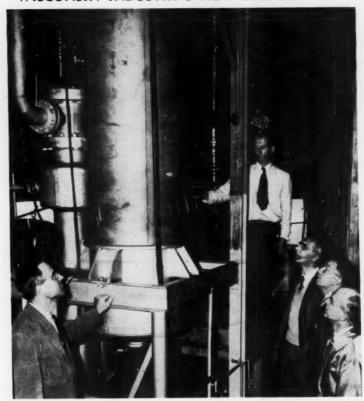
W. G. Renard, the purchasing agent; Frank Vandenberg, Harry Marchant and Garno Newman are the four who made the cross-country trip.

This mill now has four 132 inch Yankee Fourdriniers in operation, trimming 124 in., rated at 125 tons daily of roll and folded toilet and towel, napkins in various forms, excelsior and colored crepe. It makes its own groundwood, rated 40 tons daily.

Correction

We erroneously reported last month that Dr. Karl R. Karlson was going to New Zealand to help build a mill for Perkins-Goodwin. He was formerly with Perkins-Goodwin but the mill is not theirs. Dr. Karlson is working on it with Merritt-Chapman-Scott.

WISCONSIN INDUSTRY'S NEW EVAPORATOR



NEW TYPE EVAPORATOR, made after extensive lab tests by Struthers Wells Corp., Warren, Pa., is shown getting its first trial at pilot plant of Suffite Pulp Mfgrs. Research League at Interlake mill in Appleton, Wis. Instead of washing lime scale off after crystallizing on its surface, this evaporator equipment provides a bed of lime scalts where lime crystallizes harmlessly, it is

Early trials of a new type evaporator built by Struthers Wells Corp., Warren, Pa., at the pilot plant operations of the Sulfite Pulp Manufacturers' Research League at the Appleton, Wis., mill of Consolidated Water Power & Paper Co., have been satisfactory. But trials must continue until at least February before the Wisconsin industry will know if this

ing sulfite waste liquor, sponsors said.
"Initial results are very good indeed,"
Hans Svanoe, manager, Crystallizer Dept.,
Struthers Wells Div., Struthers Wells
Corp., said.

is a second useful method for concentrat-

PULP & PAPER reported in an exclusive article in its March 1950 issue the successful Appleton tests of the Rosenblad evaporator made by the U.S. licensee, General American Transportation Co., and last month published an article by Harold E. Jacoby of GATX on recent developments in its use.

The No. 2 pilot evaporation unit at Appleton operates on a simple principle of providing a bed of lime salts where lime can crystallize harmlessly. Thus far, there has been no indication of fouling. The Swedish unit washes lime scale off

said. JOHN BAUMANN, Supervisor, is turning on flow of liquer into this very small unit. Observing, I. to r.: MILTON LEFEVRE, League Chem. Engineer; HANS SVANDE, Mgr. of Struthers Wells Crystallizer Dept.; GROFF COLLETT, League Bus. Mgr., and ALFRED PHILLIPS, Tech. Director, Interlake mill of Consolidated Water Power & Paper Co.

after it crystallizes on evaporator surface. Until these systems were devised, scaling threw a definite roadblock in the way of efforts to economically evaporate sulfite liquor.

IN FAR WEST NEWS





ELMER E. DAVIS (left), Paper Mill Supt., Crown Z, Lebanon, Ore., for the past six years, is proud owner of a 40-year service pin from the C-Z Corp. He started in 1911 as an oiler in Camas. THOMAS E. MOFFITT (right), newly appointed

THOMAS E. MOFFITT (right), newly appointed Works Manager for Hooker Electrochemical Co., Tacoma, Wash., succeeding J. D. Rue, retired, as we announced last month. Mr. Moffitt was for mony years in the sales field for Hooker.

ODOR CONTROL IN CANADA

PULP & PAPER is privileged to present here the first detailed description of a Canadian kraft industry odor control project, written especially for our readers by Dr. R. H. Wright (shown in picture), head of the division of chemistry, British Columbia Research Council. He has directed the project supported by three eastern and two western Canadian kraft pulp producers.

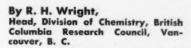
This is a further discussion of an odor control development in Canada which is apparently almost identical with the pioneering efforts of Weyerhaeuser Timber Co. at its Longview, Wash., and Springfield, Ore., laboratories and mills and which has already culminated in a successfully operating full mill scale tower at Springfield (see article by Gerritt G. DeHaas in PULP & PAPER, Dec. 1951 issue, page 70). The procedure saves sulfur as well as materially reducing odor.

It is reported that already a Quebec mill is also installing or operating a full scale

This is a brief factual report of the Canadian project. Its similarities to the Weyerhaeuser project described last month will be noted. Dr. S. E. Maddigan, Vancouver, B. C., heads the B. C. Research Council.

The project is under sponsorship of the Council and five companies-Bloedel, Stewart & Welch, at Port Alberni, B. C.; H. R. MacMillan Export Co.; Brown Corp., LaTuque, Que.; Consolidated Paper Corp., with mills at Three Rivers, Gran' Mere and Shawinigan Falls, Que., and Dryden Paper Co., Dryden, Ont.

The project, directed by Dr. Wright, recently reached a point where solid progress could be reported and where the stage of commercial application of the recommended process had been reached.



The release of foul odors has been a major defect of the kraft pulping process ever since its development more than 60 years ago. The problem of containing and controlling these odors is difficult because they are liberated at several points which are usually widely separated in the mill. The principal malodorous substances, hydrogen sulfide, mercaptans and organic sulfides and disulfides, are all readily volatilized and, while some of them are soluble in alkali, their acid properties are so weak as to render them readily displaceable by carbonic acid or even by heat alone.

The furnace gases generally contain a relatively small concentration of malodorous material but the total volume is so great that a considerable nuisance may result. The non-condensable gases from the multiple-effect evaporator of the recovery system are a second source of odor and one that often tends to be particularly rich in hydrogen sulfide.

The gases liberated in relieving and blowing the digesters are a major source of organic sulfur compounds possessing very foul odors indeed. Control of these gases is particularly difficult because their rate of release is subject to the large fluctuations inseparable from a batch process.

Condensates from the multiple effect evaporator and blow heat recovery system may contain a considerable amount of foul smelling compounds and give rise to a secondary nuisance, depending on their mode of disposal.

The first important step towards an effective solution was made some years ago when Bergstrom and Troebeck showed that "black liquor oxidation" was effective in reducing the release of odor in the multiple-effect and cascade evaporators, and also, under certain conditions, the amount released in the furnace. It had, of course, no effect on the amount of malodorous material from the digesters. It was also reported that oxidation had other advantages including improved sulfur recovery and reduced corrosion in the recovery system.

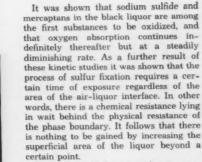
It is well known that sulfate black liquor has a marked affinity for the oxygen of the air, particularly at elevated temperatures, and Bergstrom and Troebeck showed that a major part of the oxygen taken up is used in oxidizing the mercaptans and inorganic sulfides. The organic constituents of the black liquor appear to act as catalysts.

The term "black liquor oxidation" has been applied to this process. It is, of course, only a partial oxidation since only certain constituents of the liquor are oxidized. Complete oxidation only takes place in the recovery furnace. Tomlinson and his co-workers have used the term "black liquor stabilization" to describe essentially the same process.

Since the object of the operation is to fix volatile sulfur compounds in the liquor by oxidizing them to less volatile derivatives, the term "black liquor fixation" appears to be more accurate.

Early in 1948 the British Columbia Research Council undertook an investigation of the problem of odor control on behalf of a group of Canadian pulp mills. After a survey of the literature, black liquor oxidation or fixation was selected as offering the most promising point of departure.

Work was started simultaneously on two aspects of the problem. A rapid and convenient method of analyses for hydrogen sulfide and methyl mercaptan was developed, and the kinetics of the oxidation process were studied.



On the basis of these considerations attention was then directed to the design of an oxidation apparatus which would give optimum values to both the area and the time of contact, between the black liquor and the air.

A tower packing was eventually developed which appears to be cheap, durable, and remarkably effective. The black liquor produced when certain species of wood are pulped has a strong tendency to generate large amounts of very troublesome foam. In order to avoid the complications involved in a foam breaking apparatus, special attention was given to producing an oxidation apparatus in which foaming would not take place.

A semi-pilot installation with a designed capacity of 5000 lbs. of black liquor per hour was then set up at the Bloedel, Stewart and Welch kraft mill at Port

Alberni, B.C.

This unit was operated satisfactorily and no difficulties from foaming were encountered even when running at a very considerable over-load.

The primary purpose of the fixation process was odor reduction. To ensure that the spent air discharged from the apparatus would not be a source of odor nuisance, concurrent flow of air and black liquor was used. In this way, malodorous material which might be liberated from the fresh black liquor entering the unit and taken up by the air stream there, was reabsorbed and fixed in the oxidized black liquor farther along.

In a special series of experiments, noncondensable digester gases were added to the air supply to the unit, giving concentrations of methyl mercaptum as high as 15 milligrams per liter. These gases were practically completely absorbed and the air leaving the apparatus carried little if any of the characteristic kraft odor. It therefore appears that the system is capable of absorbing and fixing the malodorous constituents of the digester gases very effectively.

A trial run of fixed black liquor through the recovery system of the mill gave evidence of a very great reduction in the amount of odor released in the evaporation and combustion of the black liquor.

The trials with this tower therefore provide strong indications that a very effective system of odor reduction can be centered in a black liquor fixation unit of the type under development by the British Columbia Research Council. Such a system would have all the other advantages deriving from black liquor oxidation. The design of a full scale unit is now in hand.

FOR SALE

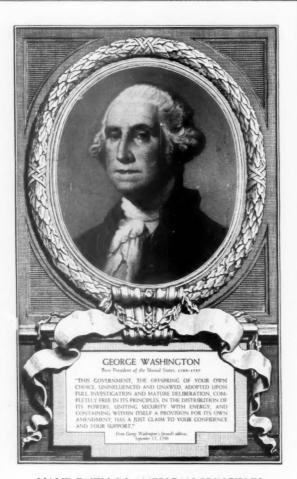
One Hesse-Ersted Chip Screen, 7½ HP. Top Screen 7½x16', 1x1½" hole. Solid bottom screen 7½x12', ½0x½" hole. Solid sheet underneath. Good operating condition. Price \$1250 F.o.b. Dallas, Oregon. For further inquire purchasing office,

WILLAMETTE VALLEY LUMBER COMPANY Dallas, Oregon EXPERIENCED MILL OR FACTORY REP-RESENTATIVE Desires connections as sales representative. Exclusive or side line. Has many years experience in paper, envelopes, binders and kindred specialties. Pacific coast or principally Northwest territory. Write to P&P Box No. 104, c/o PULP & PAPER, 71 Columbia Street, Seattle, Wash.

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PLANT ENGINEER

LARGE EASTERN PAPER MILL WITH EXTENSIVE WOOD PULP AND CHEMICAL OPERATIONS IS SERIING AN EXPERIENCED PLANT ENGINEER. WILL BE RESPONSIBLE FOR ALL PLANT ENGINEERING FUNCTIONS. PAPER MILL EXPERIENCE NOT ESSENTIAL. ENGINEERING DEGREE REQUIRED. SALARY DEPENDENT UPON QUALIFICATIONS. COMPANY IS LOCATED IN SMALL CITY WITH DESIRABLE SCHOOLS AND LIVING CONDITIONS. IMMEDIATE AREA UNSURPASSED IN NATURAL BEAUTY, HUNTING AND FISHING. THIS LARGE MILL IS AFFILIATED WITH A LARGE NATIONALLY KNOWN COMPANY OF EXCELLENT CHARACTER AND TOP FINANCIAL RATING. THIS IS AN UNUSUAL OPPORTUNITY, YOUR REPLY HELD IN CONFIDENCE. WRITE TO P&P BOX NO. 105 c/o PULP & PAPER. 71 COLUMBIA STREET, SEATTLE, WASHINGTON.



HAVE FAITH IN AMERICAN PRINCIPLES

Draper Brothers Company

Canton, Massachusetts

DRAPER

HELP WANTED

PROCESS ENGINEER—College graduate with 4 years experience in Pulp and Paper Mill. Permanent position, San Francisco Bay area. Please send reply to P&P Box No. 103, c/o PULP & PAPER, 71 Columbia Street, Seattle, Wash.

SALES ENGINEER WANTED

With pulp mill experience, by well-established machinery firm in Chicago. Opportunity for advancement. Please reply to: P&P Box No. 102, c/o

PULP & PAPER

71 Columbia Street, Seattle 4, Wash.

Celebrate 25 Yrs. With Ross Engineering

From U.S. and Canda, 21 members of the staff of Ross Engineering, who have completed 25 years or more with the company, were guests of the management at dinner Nov. 8th at the New York Athletic Club. The group, which included wives, was welcomed by J. O. Ross, founder, and S. W. Fletcher, president. It was pointed out that few businesses in their 30th year could boast of a larger number with long service. They were from New York: Catherin Cashman, Jane Falasca, S. W. Fletcher, J. M. Petix, H. G. Rappolt, J. O. Ross, R. E. Schultz; from Montreal-W. R. Andrews; from New Brunswick, N.J.-W. J. Blake, Joseph Catanese, L. Van Deursen, V. S. Kozubal, G. M. Manry, W. M. Orchard, M. A. O'Shea, R. Sadwith, F. J. Schultheiss; from Boston-F. W. Partsch; from Chicago-L. Degnan, R. H. Melin and A. E. Montgomery.

Barnebey-Chem. Processes Is Organized

H. L. Barnebey, formerly sales promotion and Chlor-Alkali department manager for the Blaw-Knox Construction Co., has established his own business, H. L. Barnebey—Chemical Processes, in Pittsburgh (P. O. Box 144) for selection, evaluation and licensing of important chemical processes. His service includes selection or evaluation of a process for a particular purpose or to establish its worth and promotion on a royalty basis of chemical processes which have proved their worth.

Albert Award Established

An annual prize paper competition to provide encouragement for young men in the industry has been established by the Delaware Valley Section of Tappi. The Albert Award, under which the competition will be known, was named for Edward J. Albert, one of the founders and past chairmen of the section, and head of Thwing-Albert Instrument Co.

First competition will cover the period 1951-52 on the 20th anniversary of the section, Participants may choose as subjects any technical aspect of pulp and paper with which his employment is connected.

Papers will be presented May 22, 1952, and

Papers will be presented May 22, 1952, and preliminary copies must go to Don Newcomb, Riegel Paper Corp., Milford, N.J., by Apr. 24, 1952. Fred Leser, Jr., Westinghouse Corp., Philadelphia, is award chairman.



PACIFIC COAST NOTES

GLEN D. KING, is now assistant to the operating paper mill superintendent (Charles Ackley), at the West Linn, Ore., Division of Crown Zellerbach Corp. Mr. King had been manager of new products in the San Francisco office, and before that was in the Research Division for the company at Camas. A few years ago he made extensive studies of slime controls. Born in Spokane, Wash., he graduated in chem. eng. at the Univ. of Washington, joined C-Z in 1934.

FRED ARMBRUSTER, Dow Chemical Co.'s Northwest manager, and his wife, Audrey, became the parents of an adopted two-weeks old boy on Thanksgiving Day. His name is Kurt. They have also moved into a new home at 433-Lake Washington Boulevard North. Fred's father was the late G. J. Armbruster, widely known mill supt. in both east and

west, U. S. and Canada.

SAM SALMONSON, of Portland, Ore., former general supt. at Soundview Pulp, has been serving as a consultant at the Watson Island, B. C., operations of Columbia Cellulose, subsidiary of Celanese. PAUL C. BALDWIN, Scott Paper Co.'s new assisant vice president, in charge of engineering and equipment procurement for the new Scott paper mill planned for Everett, Wash., and also in charge of coordinating the Soundview Division of Scott with its Coos Bay Pulp Corp., subsidiary, moved west for the second time in his career. He was with the Weyerhaeuser Pulp Division in Everett before joining Scott. Born in Delaware, he attended Syracuse and the Institute of Paper Chemistry. He returned to Chester, Pa., for Thanksgiving and to arrange to take his wife and three children west.

BOB SHATTUCK, bleacherman at Weyerhaeuser's Everett sulfite mill, now 36. followed his father and uncle into that company. His uncle Bert drove a wagon team for Weyerhaeuser in the West before its first sawmill was built; his father was 20 years in the Everett sawmill, and

both are now retired.

H. NORMAN MILLER, manager of Portland, Ore., office of Westinghouse Electric for the past 6 years, was presented a 25-year pin at a Westinghouse luncheon in San Francisco by Walter J. Maytham, Pacific Coast district manager. Mr. Miller, who lives at 3025 NE 30th Ave., Portland, is an Oregon State graduate.

U. M. DICKEY, Scott Paper Co.'s new Seattle vice president and senior board member in the West, in charge of its Soundview division, went to Palm Springs, Calif., for a vacation in November.

(Continued on page 92)



NASH ENGINEERING COMPANY 410 WILSON AVE., SO. NORWALK, CONN



PACIFIC COAST NOTES

EDWON M. PETERS, newly appointed sales engineer for The Bristol Co. serving mills in Washington, Oregon, Idaho, Montana and Alaska, office at 6626 White Bldg., Seattle, recently returned from more than two months at the Bristol plant in Waterbury, Conn., attending a school on instruments and becoming familiar with plant operations.

GEO. L. DRAKE, Simpson Logging Co. v.p., Shelton, Wash., has been named director of its land and timber management program in all operations.

ELMER E. DAVIS, who started in the industry as an oiler on a Camas machine in 1911, recently was given a 40 year pin at a dinner in Lebanon, Ore., where he is paper mill superintendent. Don Denman, vice president, attended, and Herb Wymore, manager, gave Mr. Davis his pin. Mr. Davis, born in Portland, Ore., worked at Camas, West Linn, Ocean Falls, Camas, Port Townsend, Camas again, in that order, before landing in Lebanon as superintendent 6 years ago.

CHARLES SNYDER, power engineer, JACK LANNING, machinetender, and ARNET PATTERSON, accountant, were 35-year pin recipients at Lebanon, Mr. Denman presenting.

WALTER A. SALMONSON, Coast representative for Draper, DeZurik and other lines, has bought a new home at 2330 Northeast Thompson St., Portland 12, Ore., phone-GA 3574. He has moved wife, four children, and office as well, into the new establishment.

JOHN FULTON, Pacific Coast Supply

WITH LONGVIEW MILL





R. E. (DICK) HANLEY (left), Northwestern U. Evanston, Ill., Football Coach, 1927-35, who made the Million Dollar Round Table of insurance business in Chicago in Just 3 years, has joined this industry as Vice Pres. of Pacific Paperboard Co., Longview, Wash. Will essist Pres. E. E. Flood in executive capacity. Mr. Hanley is one of famed Hanley football borthers of Washington state athletics. He was Co-Coach festive All-State Schipe Football team for 12 of East's All-Star Shrine Football team for 12 years. For past two years was at Albuquerque, N. M., as Thermacon distributor. He served in Marines in two wars.

J. C. McFARLAND (right), is also newcomer with Pacific Paperboard, as Terhnical Director. From 1932 to 1951 was Manager of Central Fibre Preducts Ce., Quincy, III.

Co., manager received only one-half of a birthday cake in a surprise party for him at the Seattle Superintendents convention on the night of Nov. 29. Reason was that DAVE FULTON, also of Portland, but no relative, who is Westinghouse representative, had a birthday on the next day, the 30th. John got his half of the cake just before midnight; Dave got his just after.

JOHN K. DAVIS is acting paper mill superintendent at the Port Townsend kraft mill, which JOHN QUIGLEY, the superintendent, is on a tour visiting mills in East and South. Mr. Davis, born in Ligonier, Pa., moved up from tour boss, has been at Townsend 23 years.

LEONARD ZIEL, mill manager, Crown Zellerbach, Port Townsend, and his wife, Lillian, led the delegation from there to the Supts. convention in Seattle.

R. L. MULLEN, safety director, Longview Fibre Co., Longview, Wash., has been passing out cigars celebrating birth of 9 lbs. 2 oz. son Richard Michael on Nov. 24th. KEN WILEY, of Eugene, Ore., missed the Superintendents meeting in Seattle because of a trip east to the factory of Bauer Bros., which company he represents in the

JOHN ROSLUND, of Portland, Ore., Downingtown Mfg. Co. representative on the West Coast, accompanied James Battersby, sales manager of Masson-Scott, British cutter and layboy makers, on West Coast mill visits. JAMES THORNTON, Downingtown Sales engineer, was with

Columbia's 6th Digester

Columbia Cellulose Co. (Celanese) is build-Communa Centionse Co. (Cetanese) is building a sixth digester for its mill at Watson Island, B.C., and Chemipulp Process Inc., Watertown, N.Y. is installing the circulation and hot acid systems as it did for the other 10,000 cu. ft. digesters, all built by Dominion Bridge Co., Montreal.

IF IT'S A DEXTRINE, STARCH OR ADHESIVE PROBLEM... "Put it up to



Let Our Paper Department Experts Give You Valuable Aid on ...

- 1. TUB AND COATING STARCHES
- 4. LAMINATING ADHESIVES
- 2. TAPIOCA FLOURS
- 5. BAG PASTES
- 3. CONVERTED POTATO STARCHES 6. CORRUGATING STARCHES
- - 7. MANNOGAL (Mannan-Galactan) PRODUCTS

Morningstar's modern laboratories and technical experts can lend you valuable aid on your Dextrine, Starch and Adhesive problems. Years of intensive research have resulted in the development and perfection of a specialty line of exclusive products for the paper industry. Without obligation, our paper specialists will gladly study your individual mill requirements and recommend the most efficient and economical formula to improve the operation you describe.

WRITE US - TELL US ABOUT YOUR NEEDS!

MORNINGSTAR, NICOL, INC.





ALBERT S. MERRILL (left), President σ_q Chemipulp Process Inc., and Chemipulp Process Ltd., who has announced appointment of A. HALVAR LUNDBERG (right), or Soutile, os Representative of those companies in the Pacific Coast and Mountain States and all of Western Canada. Mr. Merrill, whose headquarters are in Watertown, N.Y., recently visited his companies' installations in British Columbia and the Pacific states.

Lundberg Represents Chemipulp Process

Albert D. Merrill, president and treasurer of Chemipulp Process Inc., Watertown, N.Y., and Chemipulp Process Ltd., Montreal, Canada announces that A. Halvar Lundberg, chemical engineer associated with development of West Coast pulp and paper mills for a quarter of a century, will be representative of these companies in all Pacific Coast and Mountain States and all Western Canada.

Mr. Lundberg, with whom is associated his son, Lennart Lundberg, makes headquarters in the Orpheum Bldg., Seattle, Wash.

"No one is more familiar with our work than Mr. Lundberg, who was associated with our business in the Far West from 1927 to 1946," said Mr. Merrill. "We are pleased that he is able to resume this association."

The Chemipulp companies engineer and install the Chemipulp Hot Acid System, as well as these Chemipulp K-C systems: Circulating system, chip distributor system, independent recovery system and spray type SO₂ gas cooler. The latter systems are marketed by the Chemipulp companies under agreement between them and Kimberly-Clark Corp. and Babcock & Wilcox Co.

Jack Grant heads the Montreal office, in the Crescent Bldg, there, and is vice president and secretary of both companies. Mr. Merrill's offices are at 500 Woolworth Bldg., Watertown, N.Y., and he has been president since 1945. He had been vice president from the year the company was first incorporated in Dec. 1926 to 1645, during which time his associate, T. L. Dunbar, was president of Chemipulp Process Inc. Albert D. Merrill has been president of Chemipulp Process Ltd., their Canadian company, since this Canadian company was chartered in 1935, and president of both companies since 1945.

New Wood Product

The advantages of plywood and hardboard, are incorporated in one new material called Plyron, now in commercial production in 10 different West Coast plants.

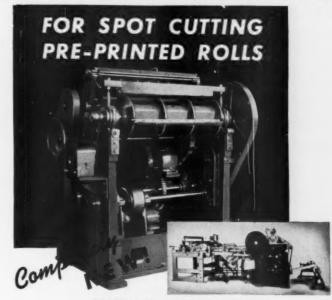
A plywood inner construction makes Plyron puncture proof, strong, rigid and dimensionally stable. Hardboard. made by compressing wood fibers into thin hard sheets of uniform density and smoothness, gives the new product its tough, wear-resistant, easily paintable surface. The two materials are permanently bonded with moisture-resistant glues.

Plyron was used for concrete forms in the construction of New Jersey turnpike underpasses.

New Australian Paper and Pulp Mills

A new 15,000-ton capacity writing paper mill at Geelong, Victoria, and a pulp mill in the Otway Forest are features of a large expansion plan involving \$8,960,000 to be undertaken in Australia by Associated Paper and Pulp Co. Ltd.

Associated Pulp has acquired the holdings of Thomas Owen and Co. Ltd., England, in its Australian associate, on a share exchange basis. The agreement provides the English company will complete installation of its paper machinery in Australia and supply technical assistance. The Geelong mill, should be in production by 1954-55. The pulp mill will process eucalypt timber as well as pine, will be completed after the paper mill.



ROTARY SPOT CUTTER

For precision register and accurate spot cutting of preprinted traveling webs at a high rate of production. This high speed rotary cutter can be equipped with photo-electric compensator or may be manually controlled.

Save time, eliminate waste and increase production with this modern S & W equipment. Built in 40", 50", 60", 71" and 83" widths. May be furnished with lay boy and stacker as illustrated.

Write for detailed information!



Better Bearing Service

For the Pulp and Paper Industry

TIMKEN
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SKF
NEW
DEPARTURE
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NATIONAL OIL SEALS



We say "better" because our large stocks are complete... our five stores are practically next door to you whereever you may be in the Pacific Northwest... our service is fast.

Our engineers understand the pulp and paper industry's requirements for bearings—and the importance of service to an industry where bearings carry a big load every day in keeping production at its peak. These engineers are at your beck and call for competent advice and help in bearing changeovers and applications to new equipment.

We issue a Bearing Maintenance Report which is designed to give you a handy reference source for ready answers to questions on bearing maintenance, new bearings and applications and current improvements in methods. A note on your letterhead will bring it to you. Won't you drop us a line?

And-of course-for better bearing service-we're as near as your phone.

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MIDWEST NOTES

A. S. "SCOTTY" OLIVER, superintendent of steam power, M & O Paper Co., International Falls, Minn., made a three months tour of Britain in '51, visiting his old employer, The Alex Pirce & Sons fine paper mill which was established in 1780. He found it using Waldron brush coaters.

MRS. AL PERLICK, wife of the stock preparation supt. at KVP, served as election board chairman recently at Parchment, Mich.

WILLIAM C. BERGSTROM, a native of Neenah, Wis., and brother of President N. H. Bergstrom of Bergstrom Paper Co., died Nov. 22 at his Montclair, N.J. home at the age of 73.

ALLAN B. MILHAM, whose family headed the old Bryant Paper Co. of Kalamazoo from its founding for 51 years until his retirement as president in 1946, when it was sold to St. Regis, is a member of the Governor of Michigan's three-man liquor board. His duties take Mr. Milham too all parts of Michigan.

H. L. VOSS of Mosinee Paper Mills, Mosinee, Wis., at last reports, had a new coat to guard against the winter blasts in the Wisconsin River Valley—but not of his choosing. He appealed to Lake States TAPPI members who attended the meeting at the Mead Motelized Hotel in "the Rapids" in an effort to get back his own gray gabardine topcoat, apparently taken by mistake.

HENRY G. BOON, Kimberly-Clark vice president, inducted 16 new members into Main Office Quarter Century club at a North Shore Golf Club dinner at Neenah, Wis. That brought to 96 the 25 year employes just in the Main Office, 720 in the corporation.

MRS. CHARLES S. (Caroline Taylor) CAMPBELL, wife of the treasurer and director of Kalamazoo Vegetable Parchment Co., Parchment, Mich., died recently at the age of 81.

F. J. SENSENBRENNER, former chairman of Kimberly-Clark, was recently honored for his services as regents board president at the U. of Wisconsin, and at Evanston he received a "Centennial award for the Northwest Territory"—one of 100 recipients.

DR. EMIL HEUSER, long time at Appleton at the Institute as cellulose authority, gave a recent series of lectures at Olin Industries, East Alton, Ill. This company plans a pulp mill in the South

plans a pulp mill in the South. JOHN F. ZIESERL was named Chicago district manager of Industrial Chemical Sales of West Virginia Pulp & Paper, succeeding John P. Harris, retired.

PERSONALS-MIDWEST

(Continued from page 94)

GEORGE WINGROVE, 66, former superintendent of Kimberly-Clark's Neenah mill, died recently. He was born in England and was with K-C 48 years.

M. H. KETTENHOFEN, who has been with Kimberly-Clark 36 years, has been named administrative assistant to the director, W. F. Cook, in Neenah. He will work on an assignment basis. H. WAINSCOTT is named salary administrator and assumes responsibility for standard procedure coordination, salary administration and other activities. R. V. THOMS is the new labor relations supervisor, heading up collective bargaining. GEORGE H. GERPHEIDE, former president of Hawthorne Paper Co., Kalamazoo, Mich., has recently joined the Paper Corp. of United States, New York paper firm, as Western manager. His offices will be in Kalamazoo where he will handle complete line of Paper Corp. including papers marketed by its E. de Vries division.

SOUTHERN NOTES

KIRK SUTLIVE, public relations manager for Union Bag & Paper Corp., Savannah, who met many of the delegates to the Engineers Conference there last fall, is the Kiwanians' governor for the state of Georgia district. As one of the governors he will attend the national convention in '52 in Seattle.

WALTER J. DAMTOFT, assistant secretary-treasurer of Champion Paper, from Canton, N.C., is a Southern representative of the new 1952 officers of American Forest Products Industries, Inc., industry-financed educational organization of Washington, D.C. The South at least may partially claim the new president, JIM MADDEN, who lives in Boston, but is president of H & W, with mills in Alabama and Maine.

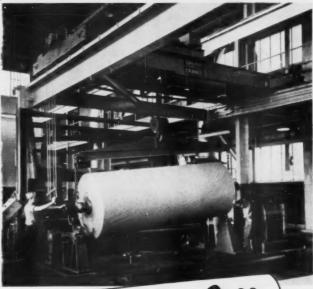
F. H. JONES and ARTHUR LANIER, have been promoted to assistant power plant superintendents, at Union Bag & Paper Corp., both reporting to J. J. TRIBBLE, first assistant power superintendent. Mr. Jones was a shift foreman and Mr. Lanier was power maintenance foreman.

ROBERT GILMORE, general safety supervisor for Rayonier, recently visited the Fernandina, Fla., division, the fourth time he has called there in 5 years. Rayonier was shooting for its 7th straight year of reducing company injury frequency in 1951.

free DOHERTY, resident manager of the Fernandina mill of Rayonier, and Mrs. Doherty, vacationed recently on "Top of Old Smokey" at Fontana, N.C.

PAUL CORNING, plant engineer, Rayonier Inc., Fernandina, Fla., has successfully recuperated from a recent operation.

Howe and Dollars saved



in Handling Rolls

The special spreader and the low head room requirements for this EDERER crane makes moving the big rolls from reel to winder, an easy job. This is just one part of the "job engineering" that went into the designing and building of this crane—resulting in man-hours saved, dollars saved.

Many such special requirements of the pulp and paper industry call for special cranes—roll handling and roll storage cranes, canting cranes, heavy duty stand-by cranes, cranes requiring extremely low head room or extra high lift.

EDERER has "jobengineered" cranes for the nation's leading pulp and paper manufacturers ... and an EDERER engineer will be glad to discuss your job requirements.



EXPORT DIVISION: 301 Clay Street . San Francisco 11 . California





LEFT, VIEW OF NEW SEWER OUTFALL diffusion section for Longview Fibre Ce. kraft mill, extending into Columbia River at Longview, Wash. Line partially floats, partially is supported on shore. Nazzles are kept on top by logs lashed to pipe at outer end. Piling in background provides moorage for catwalk.

RIGHT, CLOSEUP OF ONE OF DIFFUSION NOZ-ZLES and a section where pipe is necked to smaller diameter. Inspection manhole shown at right. Diameter reductions made to allow pipe to have continuous level service along bottom. Nozzie has cap on it to retain air.

New Kraft Effluent Diffusion Line O.K.

How the largest kraft pulp and paper mill on the Pacific Coast has acted to abate stream pollution is shown in these illustrations of Longview Fibre Co.'s new diffusion sewer outfall into the Columbia River. It acted on a suggestion.

E. F. Eldridge, state pollution director, said the method would be satisfactory. He suggested the installation which was approved by the commission. Company engineers designed the outfall, after studying waste liquor pipelines at mills in the South and Pacific Northwest.

A 600 ft. extension of the existing 965 ft. sewer line was made. The diffusion method was indicated as successful in helping keep effluent strength below the danger point for aquatic life. Results have

proved to be all that was expected. Diffusion looks good.

The last 100 ft. is 23 in. diameter; next to last is 30½ and the remainder of new and old line is 34. There are 38 diffusion nipples of 6 in. in the last 300 ft., spaced 8 ft. apart.

A diver bolted old and new line while effluent was pouring out of the former. Before lashed to moorings, a huge bubble of foam and air broke the new section in 4 places; but it was soon rewelded and repositioned and there has been no further trouble in several months.

Tennessee Project

Referendum for BONDS for construction of a \$20,000,000 wrapping paper mill was held in November under an agreement between city officials of Elizabethton Tenn., and Monadnock Paper Mills, Inc., of Pennington, N. H. The mill would be erected on the Watauga river.

Sulfur Crisis To Ease In Canada In June

The most critical period for sulfur supplies in Canada will be during the first six months of 1952, according to R. M. Fowler, president of the Canadian Pulp and Paper Association and director of the pulp and paper division, Canadian department of defense production.

Mr. Fowler's statement was made following a meeting between Canadian production chiefs and the National Production Authority and Defense Production Administration to discuss sulfur supplies for Canada.

During the second half of 1952 some auxiliary sulfur supplies from pyrite roasters, sour gas wells and smelter gases will begin to appear and will expand during 1953, said Mr. Fowler. To meet the situation until these auxiliary supplies become available, Canada and the U.S. are able to make some contributions, he said, U.S. officials have agreed to supply sulfur to Canada on a similar basis to U.S. industry in the first quarter of 1952.

Western Mills to Produce Sulfur

Three Pacific Coast pulp and paper companies, Crown Zellerbach Corp., Rayonier Inc. and Soundview Pulp Co. plan to develop an auxiliary supply of sulfur near Powell Park, Wyo., for their pulp operations. The project depends upon an expected authorization from the government regarding distribution of the output of the projected plant. The projected plant will use hydrogen sulfide or "sour gas" purchased from Seaboard Oil Co., of Delaware, and will have a daily capacity of 100 tons.

WIRE CLOTH

FOR PULP AND PAPER MILLS
PHOSPHOR BRONZE-MONEL-STAINLESS STEEL

AVAILABLE IN A BROAD RANGE OF CONSTRUC-TIONS AND ALLOYS FOR CYLINDER FACES, SAVE-ALLS, DECKERS AND THICKENERS, FILTERS AND WASHERS

Pacific Coast Supply Company
PORTLAND, OREGON - SAN FRANCISCO, CALIFORNIA

HERMANN Improved CLAFLIN



CONTINUOUS BEATER & REFINER

EXCLUSIVE SALES AGENT: THE EMERSON MFG. CO., LAWRENCE, MASS.

THE HERMANN MANUFACTURING CO. LANCASTER, OHIO



Gilbert & Nash Company · Appleton, Wisconsin

BLACK LIQUOR Confidence EVAPORATORS Confidence is Important!

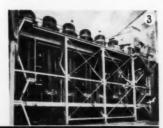


Goslin-Birmingham black liquor evaporators have earned the confidence of the pulp and paper industry as evidenced by the ever increasing number of G-B Evaporators installed each year. This acceptance is based upon our background of experience, a comprehensive service program, and evaporator units designed to meet the mills' specific requirements for economy and ease of operation.

Let G-B Engineers Discuss Your Evaporator Problems With You



- I Six body sextuple effect Goslin-Birmingham patented self-supporting evaporator—an outdoor installation.
- 2 Five-body quintuple effect Goslin-Birmingham conventional type evaporator, installed in a recovery building.
- 3 Six-body sextuple effect Goslin-Birmingham conventional type evaporator with steel work for outdoor installation.



B

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BIRMINGHAM, ALABAMA

CHICAGO: F. M. deBeers and Associates, 20 North Wacker

Mount FREE Hope wheeling expanders

Improve Handling of Paper Machine Felts!

Get Your Money's Worth From Every Felt Used

Mount Hope Free Wheeling Expanders Improve Handling of Felts because they—

- Keep felt to width with s m o o t h easy spreading effect.
- 2. Eliminate bowing of seam, give improved tension control on felts.
- Insure smooth felt, at full width, when carrying paper.

Send today for NEW bulletin EPW with information on Free Wheeling Expanders in handling Paper and Felts.



Typical Felt Installation, courtesy of PEJEPSCOT PAPER CO.

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15 FIFTH STREET . TAUNTON . MASSACHUSETTS



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ORISKANY, N. Y. by H. WATERBURY & SONS CO.

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RUBBER COVERED ROLLS of every type and size can be handled by Griffith Rubber Mills specialists. Pioneers in the field, Griffith has developed new methods and specially designed machinery to give superior service. At Griffith the only machinery in the West for multiple drilling of suction rolls is available.

TANKS, PIPES, FITTINGS and other equipment are pratected against chemical attack, contamination, rust and abrasion by Griffith installed protective rubber coatings. Rubber linings specially developed to meet the needs of the pulp and paper industry add years of service to irreplaceable equipment.

DOCTOR BLADES and DECKLE STRIPS manufactured by Griffith Rubber Mills are made from rubber compounds specifically developed to give greater efficiency and longer life.

Pulp and paper mill rubber requirements are a specialty with Griffith Rubber Mills. The samplet facilities of our research departments and testing laboratory are available to develop solutions to value serial industrial problems.

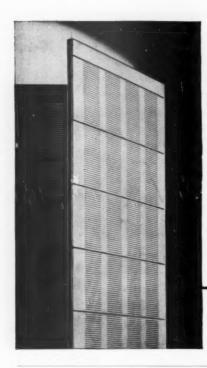
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Quality Rubber Products Since 1911 2439 N. W. 22nd AVE., PORTLAND, OREGON IS THIS SHIPMENT FOR YOU?



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AMERICAN POTASH & CHEMICAL CORP.
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Here's Why More Than 30,000 FABRICATED SCREEN PLATES

Are Now In Service

"Hardy" fabricated screen plates, made by Magnus, have a high-strength, thin-sheet design -specially engineered for maximum flow. That's why you're sure of these 3 service-proved advantages:

 Increased Plate Capacity - The thin sheet eliminates relief milling, and with recommended arrangement, substantially increases capacity per plate.

2. Longer Life-Slots remain sharp, side walls highly polished for the life of the plate. There's greatly improved corrosion resistance.

 High, Sustained Yield - You get consistent, uniform quantities of cleaner pulp.

It all adds up to improved performance at reduced operating costs. Complete information is yours on request. Or if you like, we'll gladly have an engineer call.



MAGNUS METAL CORPORATION, Fitchburg, Massachusetts

Metalworkers for the Paper Trade

SCREEN PLATES: BRONZE, CHROME-NICKEL-STEEL, AND INCONEL VALVES: GATE, SWING CHECK, BLOW, GLOBE, ANGLE AND "Y"

TIDEWATER CONSTRUCTION CORPORATION

Specializing in all phases of paper mill construction, new mills, extensions, alterations, modernizations and installation of process equipment, we utilize highly skilled personnel having years of experience.

We are proud of our part in the Paper Industry's growth as well as our record of "repeat" business with its leading firms.

Our organization is available at any time to discuss your requirements without cost or obligation.

TIDEWATER CONSTRUCTION CORPORATION

ENGINEERS—GENERAL CONTRACTORS
NORFOLK, VIRGINIA

BRUNSWICK MILL EXPANSION

(Article concluded from page 52)

Overall water requirements range between 65,000 and 70,000 gallons per daily ton.

65,000 and 70,000 gallons per daily ton.

A new pump house was constructed with six pumps, three handling approximately 10,000 gpm of treated water and three approximately 9000 gpm of untreated water. Electrical controls are housed in a section of the same building. A new distribution header system was installed. This means that water is always available at the pumped rate and no one take off can completely run out of water. The new piping is entirely above ground eliminating much trouble in maintenance. Water level at Brunswick is only two feet below ground and pipe corrodes rapidly below ground in the salt water.

Zellerbach, Wollenberg To Speak on Safety

The annual Joint Labor-Management Safety Conference of the pulp and paper industry for the state of Washington, at the Winthrop hotel in Tacoma, Wash., Jan. 24-25, will have Governor Arthur B. Langlie and two top management men-President J. D. Zellerbach of Crown Zellerbach Corp., and President H. L. Wollenberg of Longview Fibre Co., both from San Francisco-as speakers.

Similar state meetings are held each year in Oregon and California.

New Flintkote Mill

Pioneer Division of The Flintkote Co. is moving rapidly in building its third plant on the Pacific Coast-the new \$3,000,000-9 pt. board mill and corrugating plant at San Leandro, in the San Francisco Bay region.

Downingtown Mfg. Co. is supplying a 6cylinder machine and stock preparation equipment; Combustion Engineering the boiler, and S & S corrugators will be installed.

Pioneer Flintkote has a paper and felt mill at Los Angeles; roofing plant at Portland, and in Hilo, Hawaii, a board mill.

Lenz Scion Enters Maine Paper School

Ehrhard H. Lenz, whose father is general manager of one of Mexico's outstanding paper industries, with mills at Loreto and Pena Pobre, near Mexico City, has entered the pulp and paper course at the University of Maine. His grandfather, Don Alberto Lenz, is a pioneer of the Mexican industry.

Celanese May Make Newsprint and Kraft

Recent developments indicate that Celanese Corp. of America has barely started its expansion in Western Canada.

Dominion Construction Co., Vancouver, has been awarded the contract for installing new equipment and machinery at the Prince Rupert, B. C., mill of Columbia Cellulose Co. to increase its capacity from 200 to 300 tons daily.

Erection of a new water treatment building has been started and this will be followed by installation of water treatment equipment, a 25-ton capacity digester and additional pumps, washers and other machinery. At present the mill has five Dominion Bridge digesters in opera-

Harld Blancke, Celanese President, declared recently that it might very well prove desirable for Celanese to erect facilities to produce pulp products, such as kraft and newsprint, in addition to high alpha and rayon grade pulp.

Mr. Blancke did not allude directly to the reported interest of Celanese Corp. in a site near Trail, B. C., for the type of integrated wood-using enterprise such as he referred to in his speech. Reports are that the company has made preliminary surveys there.

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Prepared under the direction of the Joint Committee on Vocational Education representing the Pulp and Paper Manufacturers of the United States and Canada

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Becoming with the fundamentals of the properties and composition of wood, this hook takes you through every step in preparation and treatment of wood pulp. It supplies a thorough coverage of everything that happens from the time the wood reaches the mill . . . through the time the wood reaches the mill . . . through the time the wood reaches the mill . . . through the time the wood reaches the mill . . . through the time the wood reaches the mill . . . through the time the wood reaches the mill . . . through the time the wood reaches the mill . . . through the time the time the wood reaches the mill . . . through the time to the chemical-pulp mill in the form of screened chips. It explains all the operations, equipment, theories, data, etc., concerned in the manufacture of mechanical pulp, and alkaline-process pulp, up to the time it is ready for delivery. Besides discussing in detail the bleaching of both chanical and chemical pulp, this volume gives many tests for evaluating chemical and physical properties of wood pulp.

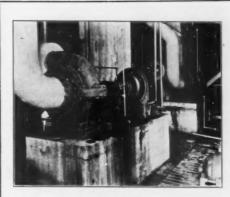
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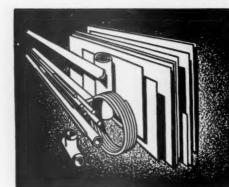
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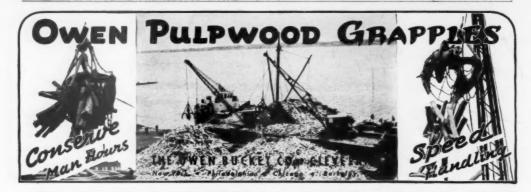
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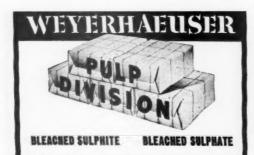
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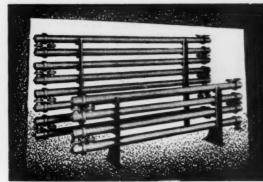
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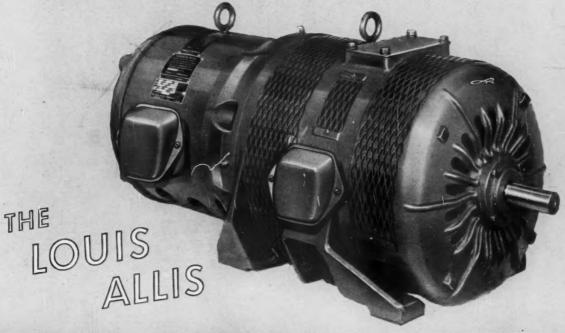
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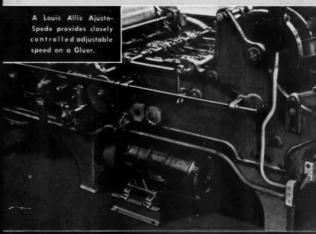
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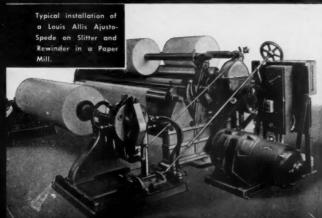
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